WILSHIRE ASSOCIATES

Wilshire Consulting

Employees' Retirement Fund of the City of Dallas

Executive Summary of Performance

Second Quarter 2019

Wilshire Associates Incorporated
1299 Ocean Avenue, Suite 700
Santa Monica, CA 90401
Phone: 310-451-3051
contactconsulting@wilshire.com

Capital Market Overview

U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market Index, was up 3.99% for the second quarter of 2019 and 18.66% for the year. This marks the strongest first half-year for U.S. equities in 24 years. Markets have been quite volatile this year as trade concerns and a possible global economic slowdown continue to sway the markets. Equity prices are also responding to actions and statements by the Federal Reserve, who has softened its monetary policy stance in the past few months.

Large capitalization stocks outperformed small caps for the quarter as the Wilshire Large-Cap Index was up 4.19% versus a gain of 2.03% for the Wilshire US Small-Cap Index. The large-cap segment of the market leads small-caps for the past twelve months, as well. The Wilshire US Micro-Cap Index was down -0.69% for the quarter and -11.32% for the one-year. Growth stocks led value during the second quarter but underperformed in the large cap space during the past twelve months.

Ten of the eleven major sectors were in positive territory during the second quarter. The strongest performing sectors were Financials (+7.5%), Information Technology (+5.6%) and Consumer Discretionary (+4.6%). Energy was the only negative sector for the quarter, down -3.9%.

Fixed Income Market

The U.S. Treasury yield curve fell across all maturities during the quarter with the biggest decreases occurring in the 1 to 10-year portion of the curve. The bellwether 10-year Treasury yield ended the quarter at 2.00%, down 41 basis points from March. The Federal Open Market Committee left its overnight rate unchanged during the quarter at a range of 2.25% to 2.50%. The committee softened some of their messaging to indicate that they are at least willing to ease should conditions deteriorate. Their current forecast, however, is for no rate changes this year and a minor downward adjustment in 2020. Credit spreads tightened modestly during the quarter within both the investment grade and high yield markets.

Non-U.S. Markets

Equity markets outside of the U.S. continue to enjoy a strong 2019, although they are generally underperforming the U.S. equity market. Indicators out of Europe are still gloomy as recent data show that the manufacturing sector in Germany has weakened, which could also mean problems for countries with close industrial ties. Manufacturing in Britain has worsened, as well, as businesses continue to struggle with the effects of Brexit. News out of Japan is also troubling as consumption and capital spending shows little or no growth. Trade negotiations between the U.S. and China, the world's two largest economies, continue with both countries maintaining firm stances going into the G20. There was some good news following the conference as the two countries agreed to not impose new trade sanctions and, rather, continue negotiations.

Real Assets Markets

U.S. real estate securities underperformed broader equities during the quarter but are still experiencing a surge for the year. Global real estate securities are up double-digits for the year, as well. Commodity results were negative for the quarter as crude oil fell -2.8% to $58.47 per barrel. Natural gas prices were down -13.3%, ending the quarter at $2.31 per million BTUs. MLPs were nearly flat for the quarter (+0.12%) but are up strong for the year. Finally, gold prices were up and finished at approximately $1,414 per troy ounce, up +9.3% from last quarter.

Summary of Index Returns

For Periods Ended June 30, 2019

	Quarter	One Year	Three Years	Five Years	Ten Years
Domestic Equity					
Standard & Poor's 500	4.30%	10.42%	14.19%	10.71%	14.70%
Wilshire 5000	3.99	9.09	14.03	10.33	14.66
Wilshire 4500	2.86	2.10	13.24	8.31	14.85
Wilshire Large Cap	4.19	10.35	14.30	10.72	14.66
Wilshire Small Cap	2.03	-1.87	11.60	7.00	14.60
Wilshire Micro Cap	-0.69	-11.32	10.75	4.64	12.04
Domestic Equity					
Wilshire Large Value	3.76%	10.70%	10.69%	8.98%	13.62%
Wilshire Large Growth	4.66	9.94	18.06	12.41	15.68
Wilshire Mid Value	1.80	2.78	8.44	7.54	14.93
Wilshire Mid Growth	4.45	6.41	15.19	8.20	15.26
Wilshire Small Value	0.25	-4.74	7.88	6.29	14.05
Wilshire Small Growth	3.89	1.11	15.37	7.56	15.04
International Equity					
MSCI All World ex U.S.	2.98%	1.29%	9.38%	2.16%	6.54%
MSCI All World ex U.S. (LC)	2.13	2.15	10.01	5.79	8.08
MSCI EAFE	3.68	1.08	9.11	2.25	6.90
MSCI Europe	4.48	1.88	9.11	1.27	6.99
MSCI Pacific	2.43	-0.18	9.37	4.29	6.90
MSCI Emerging Markets Index	0.61	1.21	10.66	2.49	5.81
Domestic Fixed Income					
Bloomberg Aggregate Bond	3.08%	7.87%	2.31%	2.95%	3.90%
Bloomberg Credit	4.27	10.34	3.74	3.92	5.77
Bloomberg Mortgage Back Sec.	1.96	6.22	2.06	2.56	3.23
Bloomberg Treasury	3.01	7.24	1.34	2.49	3.05
Citigroup High Yield Cash Pay	2.37	7.21	7.31	4.34	8.79
Bloomberg US TIPS	2.86	4.84	2.08	1.76	3.64
91-Day Treasury Bill	0.64	2.32	1.38	0.87	0.49
Currency*					
Euro vs. $	1.42%	-2.47%	0.83%	-3.62%	-2.08%
Yen vs. $	2.74	2.81	-1.62	-1.22	-1.10
Pound vs. $	-2.33	-3.60	-1.62	-5.73	-2.54
Real Estate					
Wilshire REIT Index	1.63%	10.53%	4.11%	7.84%	15.66%
Wilshire RESI	1.62	10.47	4.30	8.16	15.84

*Positive values indicate dollar depreciation.

Total Fund Overview

Asset Class Performance

	Assets ($Mil)	Assets (%)	Performance (%) QTR	YTD	1-year	3-year	5-year	10-year
U.S. Equity	478.5	13.4	3.66	17.62	4.10	12.95	9.40	13.98
International Equity	500.8	14.0	2.51	14.28	-1.11	9.61	2.81	8.10
Global Equity	254.6	7.1	2.88	15.55	3.58	11.63	5.61	-.-
Global Low Volatility	354.7	9.9	5.08	14.67	11.90	9.03	-.-	-.-
Real Estate	408.5	11.4	1.82	9.33	8.20	5.17	7.98	15.32
Global Fixed Income	511.1	14.3	3.01	6.41	7.44	2.88	3.30	4.92
High Yield	355.1	9.9	2.39	9.55	6.37	6.33	4.05	8.04
Credit Opportunities	179.5	5.0	2.68	8.74	7.42	6.60	-.-	-.-
MLPs	253.1	7.1	-0.42	19.91	2.61	2.01	-4.15	-.-
Private Equity	245.2	6.9	5.73	5.95	14.12	13.78	13.00	13.62
Cash Equivalents	38.8	1.1	0.64	1.24	2.32	1.38	0.87	0.49
Total Fund	**3,579.9**	**100.0**	**3.04**	**12.21**	**6.45**	**8.16**	**5.44**	**10.18**
Asset Allocation Policy			**3.29**	**12.55**	**7.33**	**7.70**	**5.09**	**9.97**
Value Added vs Policy			*-0.25*	*-0.34*	*-0.88*	*0.46*	*0.35*	*0.21*
Actuarial Rate			1.94	3.92	8.00	8.00	8.02	8.14
Wilshire 5000 Index			3.99	18.66	9.09	14.03	10.33	14.66
S&P 500 Index			4.30	18.54	10.42	14.19	10.71	14.70
MSCI ACWI x-U.S. IMI Index			2.74	13.33	0.26	9.16	2.25	6.77
MSCI EAFE Index			3.68	14.03	1.08	9.11	2.25	6.90
Bloomberg Aggregate Bond Index			3.08	6.11	7.87	2.31	2.95	3.90
Citigroup High Yield Cash Pay			2.37	9.89	7.21	7.31	4.34	8.79
Wilshire RE Securities Index			1.62	17.90	10.47	4.30	8.16	15.84
91-Day Treasury Bill			0.64	1.24	2.32	1.38	0.87	0.49

Total Fund Asset Growth

($Millions)	Beg. Mkt Value	Net Contrib.	Net Distrib.	Investment Fees	Investment Gain/Loss	End Mkt Value	Total Return
1Q15	3,402.5	36.1	73.5	3.5	85.2	3,446.8	2.40%
2Q15	3,446.8	44.4	83.3	3.7	6.5	3,410.6	0.08%
3Q15	3,410.6	29.6	69.6	3.4	(202.7)	3,164.5	-6.08%
4Q15	3,164.5	49.4	82.5	3.2	71.0	3,199.2	2.12%
1Q16	3,199.2	89.0	127.7	3.0	40.9	3,198.3	1.28%
2Q16	3,198.3	70.8	105.2	2.8	116.2	3,277.3	3.54%
3Q16	3,277.3	32.9	67.4	2.9	117.3	3,357.2	3.48%
4Q16	3,357.2	28.1	66.0	3.0	21.4	3,337.8	0.62%
1Q17	3,337.8	36.2	74.6	2.6	140.0	3,436.7	4.15%
2Q17	3,436.7	24.9	68.7	3.2	86.6	3,476.4	2.46%
3Q17	3,476.4	47.8	84.0	3.5	110.0	3,546.6	3.10%
4Q17	3,546.6	31.1	74.1	3.3	107.5	3,607.8	3.02%
1Q18	3,607.8	31.9	74.7	3.1	(37.9)	3,524.0	-1.09%
2Q18	3,524.0	27.2	71.0	3.6	68.0	3,544.4	1.83%
3Q18	3,544.4	31.6	75.1	3.3	101.0	3,598.8	2.74%
4Q18	3,598.8	27.5	73.9	3.5	(274.6)	3,274.3	-7.66%
1Q19	3,274.3	32.4	71.8	3.2	292.5	3,524.2	8.90%
2Q19	3,524.2	27.7	76.6	3.4	108.0	3,579.9	3.04%

- At the end of the second quarter of 2019, the Fund's market value was $3,579.9 million, which represented an increase of $55.7 million in total net asset value over the previous quarter. The change in the Fund's value was driven by $27.7 million in net contributions and a $108.0 million gain on investments. Meanwhile, $76.6 million in net distributions and $3.4 million in investment management fees flowed out of the Fund during the period.

Quarterly Total Fund Attribution vs. Policy

Asset Class	Assets (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
U.S. Equity	13.1	3.66	15.0	3.99	-1.90	-0.33	-0.03	0.00	-0.04	-0.06
International Equity	13.8	2.51	15.0	2.74	-1.16	-0.23	0.00	0.00	-0.03	-0.04
Global Equity	7.0	2.88	7.5	3.61	-0.48	-0.73	-0.01	0.00	-0.05	-0.06
Global Low Volatility	10.1	5.08	10.0	4.07	0.14	1.00	0.00	0.00	0.10	0.10
Public REITs	5.1	1.98	5.0	1.62	0.11	0.36	-0.01	0.00	0.02	0.01
Direct Core Real Estate	6.7	1.75	5.0	1.93	1.71	-0.18	-0.03	0.00	-0.01	-0.04
Global Fixed Income	14.2	3.01	15.0	3.08	-0.79	-0.07	-0.02	0.00	-0.01	-0.03
High Yield	10.2	2.39	10.0	2.37	0.19	0.02	0.00	0.00	0.00	0.00
Credit Opportunities	5.1	2.68	5.0	2.76	0.05	-0.08	0.00	0.00	0.00	-0.01
MLPs	7.1	-0.42	7.5	0.12	-0.41	-0.54	0.01	0.00	-0.04	-0.03
Private Equity	6.8	5.73	5.0	10.17	1.79	-4.44	0.11	-0.08	-0.22	-0.18
Cash Equivalents	0.8	0.64	0.0	0.64	0.75	0.00	0.00	0.00	0.00	0.00
Monthly Linked Return	**100.0**	**2.96**	**100.0**	**3.29**		**-0.34**	**0.02**	**-0.07**	**-0.29**	**-0.34**
Trading/Hedging		*0.09*		*0.00*		*0.09*				***0.09***
Total		**3.04**		**3.29**		**-0.25**				**-0.25**

3.29	**Asset Allocation Policy**
0.02	Actual/Tactical Asset Allocation
-0.29	Active Management
-0.07	Interaction
0.09	Trading
3.04	**Total Fund Return**

**Note: factors may not sum exactly to total return due to rounding.*

The Total Fund attribution table, shown above, displays the return contribution of each asset class to the Total Fund's overall return. The attribution provides some insights as to whether tactical allocation and active management within asset classes helped or hurt performance during the quarter.

- ***Strategic Policy:*** The contribution to total return from each asset class, calculated as the percentage allocated to each asset class multiplied by the benchmark for that asset class.
- ***Actual Allocation:*** The return contribution during the quarter due to differences in the actual allocation from the policy allocation (i.e.: the actual allocation to U.S. equity was higher than the policy allocation). A positive number would indicate an overweight allocation benefited performance, and vice versa.
- ***Active Management:*** The return contribution from active management. This number would be positive if the asset class outperformed the designated policy index and vice versa (i.e.: the U.S. equity segment outperformed the policy index, the Wilshire 5000 Index, during the quarter and contributed positively to active management).
- ***Interaction:*** Captures the interaction of managers' performance and asset class weighting differences.
- ***Actual Return:*** The actual return of the asset classes if allocations to them were static during the quarter. These returns will not match exactly with the actual segment returns since asset class allocations change during the quarter due to market movement, cash flows, etc.

One-Year Total Fund Attribution vs. Policy

Asset Class	Assets (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)			
	Weight	Return	Weight	Return	Weight	Return	Actual Allocation	Interaction	Active Management	Total
U.S. Equity	13.9	4.10	15.0	9.09	-1.1	-5.00	-0.05	0.01	-0.72	-0.75
International Equity	13.8	-1.11	15.0	0.26	-1.2	-1.37	0.04	0.01	-0.21	-0.16
Global Equity	6.8	3.58	7.5	5.74	-0.7	-2.17	-0.03	0.01	-0.16	-0.17
Global Low Volatility	10.2	11.90	10.0	13.00	0.2	-1.10	0.01	0.00	-0.11	-0.10
Public REITs	5.0	12.19	5.0	10.47	0.0	1.73	-0.02	0.00	0.08	0.06
Direct Core Real Estate	6.7	5.32	5.0	5.62	1.7	-0.30	-0.06	-0.01	-0.01	-0.08
Global Fixed Income	13.8	7.44	15.0	7.87	-1.2	-0.43	-0.09	0.01	-0.07	-0.15
High Yield	10.1	6.37	10.0	7.21	0.1	-0.84	-0.01	0.00	-0.08	-0.10
Credit Opportunities	5.1	7.42	5.0	7.96	0.1	-0.54	-0.01	0.00	-0.02	-0.04
MLPs	7.2	2.61	7.5	3.09	-0.3	-0.47	0.01	-0.02	-0.02	-0.02
Private Equity	6.5	14.12	5.0	10.86	1.5	3.26	-0.02	0.07	0.15	0.20
Cash	0.8	2.32	0.0	2.32	0.8	0.00	0.00	0.00	0.00	0.00
Monthly Linked Return	**100.0**	**6.01**	**100.0**	**7.33**		**-1.32**	**-0.24**	**0.09**	**-1.17**	**-1.32**
Trading		0.44		0.00		0.44				**0.44**
Total		***6.45***		***7.33***		***-0.88***				***-0.88***

7.33	**Strategic Policy Allocation**
-0.24	Actual/Tactical Asset Allocation
-1.17	Active Management
0.09	Interaction
0.44	Trading
6.45	Total Return

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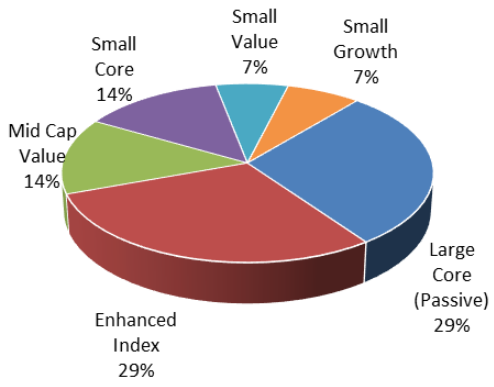
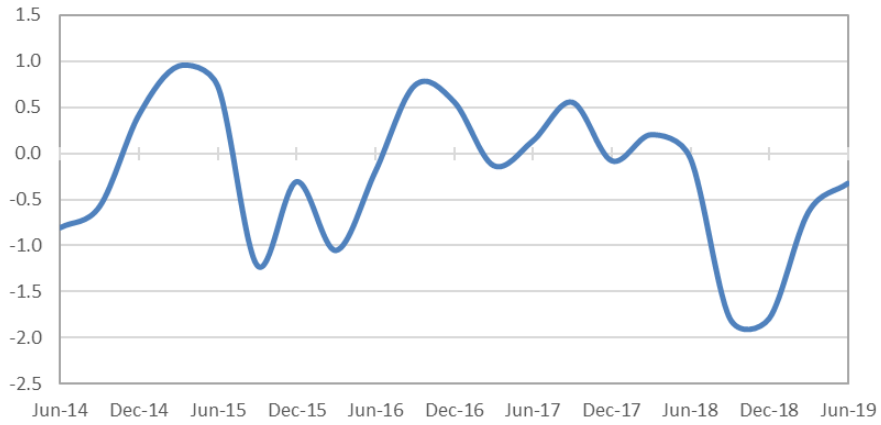
- ***Interaction:*** Captures the interaction of managers' performance and asset class weighting differences.
- ***Actual Return:*** The actual return of the asset classes if allocations to them were static during the quarter. These returns will not match exactly with the actual segment returns since asset class allocations change during the quarter due to market movement, cash flows, etc.

U.S. Equity Overview

U.S. Equity Structure



U.S. Equity Composite
Quarterly Excess Return



Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total U.S. Equity (Gross)	**$ 478.5**	**3.77**	**17.87**	**4.54**	**13.36**	**9.79**	**14.38**
Total U.S. Equity (Net)		**3.66**	**17.62**	**4.10**	**12.95**	**9.40**	**13.98**
Custom Benchmark [1]		3.99	18.66	9.09	14.03	10.33	14.66
Net of Fee Value Added vs Benchmark		*-0.33*	*-1.04*	*-4.99*	*-1.08*	*-0.93*	*-0.68*
Small Cap Composite	**$ 133.2**	3.34	16.99	-3.99	11.60	7.64	13.61
Wilshire 5000 Index		3.99	18.66	9.09	14.03	10.33	14.66
S&P 500 Index		4.30	18.54	10.42	14.19	10.71	14.70
Russell 2000 Index		2.10	16.98	-3.31	12.30	7.06	13.45

U.S. Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Large Core - Passive								
Northern Trust S&P 500 (Gross)	**$ 138.8**	**4.32**	**18.59**	**10.49**	**14.20**	**10.76**	**10.04**	**Dec-94**
Northern Trust S&P 500 (Net)		**4.32**	**18.59**	**10.48**	**14.20**	**10.76**	**10.02**	**Dec-94**
S&P 500 Index		4.30	18.54	10.42	14.19	10.71	9.97	Dec-94
Net of Fee Value Added vs Benchmark		*0.02*	*0.05*	*0.06*	*0.01*	*0.05*	*0.05*	
Enhanced Index								
T. Rowe Price (Gross)	**$ 140.5**	**4.46**	**19.69**	**10.87**	**15.55**	**11.68**	**9.54**	**Mar-06**
T. Rowe Price (Net)		**4.38**	**19.52**	**10.54**	**15.21**	**11.32**	**9.22**	**Mar-06**
S&P 500 Index + 1%		4.55	19.04	11.42	15.19	11.71	9.66	Mar-06
Net of Fee Value Added vs Objective		*-0.17*	*0.48*	*-0.88*	*0.02*	*-0.39*	*-0.44*	
S&P 500 Index		4.30	18.54	10.42	14.19	10.71	8.66	Mar-06
Net of Fee Value Added vs Benchmark		*0.08*	*0.98*	*0.12*	*1.02*	*0.61*	*0.56*	
Information Ratio				**0.12**	**0.80**	**0.51**		
Sharpe Ratio				**0.42**	**1.11**	**0.85**		

[1] Domestic Equity Custom Benchmark: Wilshire 5000 Index (3q99 – Present); S&P 500 Index (1q90 – 2q99).

U.S. Equity Overview (Continued)

U.S. Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Small Core - Active								
Systematic Financial (Gross)	**$ 65.4**	**3.70**	**15.34**	**-4.78**	**13.73**	**10.08**	**11.53**	**Jun-03**
Systematic Financial (Net)		**3.49**	**14.84**	**-5.60**	**12.77**	**9.15**	**10.73**	**Jun-03**
Russell 2000 Index + 1.25%		2.41	17.61	-2.06	13.55	8.31	10.46	Jun-03
Net of Fee Value Added vs Objective		*1.08*	*-2.77*	*-3.54*	*-0.78*	*0.84*	*0.27*	
Russell 2000 Index		2.10	16.98	-3.31	12.30	7.06	9.21	Jun-03
Net of Fee Value Added vs Benchmark		*1.39*	*-2.14*	*-2.29*	*0.47*	*2.09*	*1.52*	
Information Ratio				**-0.64**	**0.11**	**0.51**		
Sharpe Ratio				**-0.33**	**0.68**	**0.52**		
Small Value - Active								
Channing Capital Management (Gross) *	**$ 33.4**	**3.07**	**18.86**	**-4.08**	**9.44**	**5.77**	**6.50**	**Oct-13**
Channing Capital Management (Net) *		**2.83**	**18.29**	**-5.02**	**8.40**	**4.77**	**5.52**	**Oct-13**
Russell 2000 Value Index + 1.25%		1.69	14.09	-4.99	11.06	6.64	7.19	Oct-13
Net of Fee Value Added vs Objective		*1.14*	*4.20*	*-0.03*	*-2.66*	*-1.87*	*-1.67*	
Russell 2000 Value Index		1.38	13.47	-6.24	9.81	5.39	5.94	Oct-13
Net of Fee Value Added vs Benchmark		*1.45*	*4.82*	*1.22*	*-1.41*	*-0.62*	*-0.42*	
Information Ratio				**0.21**	**-0.26**	**-0.13**		
Sharpe Ratio				**-0.26**	**0.37**	**0.22**		
Small Growth - Active								
Redwood Investments (Gross) *	**$ 34.4**	**3.73**	**20.39**	**1.17**	**-.-**	**-.-**	**9.09**	**Sep-16**
Redwood Investments (Net) *		**3.55**	**19.98**	**0.45**	**-.-**	**-.-**	**8.47**	**Sep-16**
Russell 2000 Growth Index + 1.50%		3.12	21.11	1.01	-.-	-.-	13.96	Sep-16
Net of Fee Value Added vs Objective		*0.43*	*-1.13*	*-0.56*			*-5.49*	
Russell 2000 Growth Index		2.75	20.36	-0.49	-.-	-.-	12.46	
Net of Fee Value Added vs Benchmark		*0.80*	*-0.38*	*0.94*			*-3.99*	
Information Ratio				**0.21**	**-.-**	**-.-**		
Sharpe Ratio				**-0.07**	**-.-**	**-.-**		
Mid Cap Value - Active								
Smith Graham Mid Cap Value (Gross) *	**$ 66.1**	**1.80**	**13.47**	**-5.29**	**-.-**	**-.-**	**-1.77**	**Dec-17**
Smith Graham Mid Cap Value (Net) *		**1.61**	**13.04**	**-6.01**	**-.-**	**-.-**	**-2.42**	**Dec-17**
Russell Midcap Index + 2%		4.62	22.34	9.83	-.-	-.-	8.79	**Dec-17**
Net of Fee Value Added vs Objective		*-3.01*	*-9.30*	*-15.84*			*-11.21*	
Russell Midcap Index		4.13	21.35	7.83	-.-	-.-	6.79	
Net of Fee Value Added vs Benchmark		*-2.52*	*-8.31*	*-13.84*			*-9.21*	
Information Ratio				**-1.63**	**-.-**	**-.-**		
Sharpe Ratio				**-0.41**	**-.-**	**-.-**		

- The Fund's domestic equity composite generated a return of 3.66% (net of fees) during the second quarter of 2019, trailing the Wilshire 5000 Total Market Index, which returned 3.99%. Relative performance was strong during the quarter for all active U.S. equity managers in the composite aside from Smith Graham, which continues to struggle on a relative basis. Following this quarter's results, the domestic equity composite is trailing its benchmark over the one-, three-, five- and ten-year periods.

U.S. Equity Overview (Continued)

Northern Trust (Passive)

- Northern Trust manages a passive large-cap core equity portfolio for the Fund, which is designed to track the S&P 500 Index and replicate the performance of overall market. To date, the passive large-cap core portfolio is performing in line with expectations, mirroring the risk and return profile of the benchmark index and exhibiting very low tracking error over all time periods.

T. Rowe Price (Enhanced)

- T. Rowe Price manages the Fund's enhanced equity index portfolio. The T. Rowe Price portfolio returned 4.38% (net of fees) during the second quarter, leading its benchmark index (S&P 500) which returned 4.30%. During the period stock selection and sector positioning were modestly additive during the period leading to this quarter's outperformance relative to the benchmark. During the period stock selection was strongest within the portfolio's industrials and utilities sectors, both of which posted returns above that of their respective benchmark holdings. Stock selection was weakest within health care. Historically, the portfolio's overall sector allocation does not deviate too broadly from the Standard & Poor's 500 (approximately +/- 1%) which means the bulk of the value-added will come from stock selection, though a slight underweight to energy aided results during the quarter. The T. Rowe portfolio remains concentrated in large-capitalization stocks (with an average market cap of $239,811 million). The portfolio is currently outperforming against its benchmark over the one-, three-, and five-year periods as well as since inception (3/06).

Systematic Financial (Small-Cap Core)

- Systematic Financial manages the Fund's small-cap core portfolio. The Systematic portfolio returned 3.49% (net of fees) during the second quarter, outperforming its benchmark (Russell 2000) which returned 2.10%. Stock selection was the main driver of this period's results during the second quarter. From an attribution perspective, stock selection within information technology and financials provided the largest contributions to relative results. Selection in industrials, energy and real estate were also positive for the period. An overweight to industrials boosted returns during the period along with an underweight to healthcare which underperformed. Both an overweight to, and selection in consumer discretionary provided the largest drag to relative performance during the period. The Systematic portfolio is currently outperforming against its benchmark over the three-, five- and ten-year periods as well as since inception despite its recent struggles relative to the benchmark.

Channing Capital Management (Small-Cap Value)

Channing Capital manages the Fund's small-cap value portfolio. The Channing portfolio returned 2.83% (net of fees) during the second quarter, outperforming its benchmark (Russell 2000 Value) which returned 1.38%. Stock selection drove this quarter's results relative to the benchmark. Particularly large gains were incurred within the financials and communication services sectors. Here, the portfolio's holdings returned 7.01% and -1.82% versus 5.27% and -7.54% for the respective benchmark holdings. In total, stock picking decisions were positive in 8 of the 11 GICS sectors. Meanwhile, sector weighting decisions were slightly positive for the period led by an underweight energy. To date, the Channing portfolio is positioned with an underweight allocation to financials (23% portfolio weight vs. 30% benchmark weight) with overweight allocation to industrials (19% portfolio weight vs 13% benchmark weight). The Channing portfolio is outperforming over the one-year period but continues to trail its benchmark over all other extended time periods including since inception (12/13).

U.S. Equity Overview (Continued)

Redwood Investments (Small-Cap Growth)

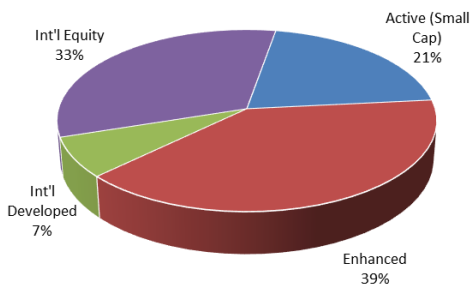
- Redwood Investments manages the Fund's small-cap growth portfolio, which was funded in late 2016. The Redwood portfolio returned 3.55% during the second quarter, leading its benchmark (Russell 2000 Growth) which returned 2.75%. The portfolio currently holds 54 securities which is considerably more concentrated than the benchmark, as such, individual stock selection typically emerges as the predominant driver of relative performance in any given period. During the quarter, several stocks within the portfolio delivered strong returns relative to the benchmark. Of note, from a stock selection perspective the portfolio was aided by contributions from its health care holdings. Success in these segments was mitigated by poor stock picking results in industrials and communication services. The largest individual contributors to performance during the period were Generac Holdings (+35%) and Repligen Corporation (+45%). During the period management increased exposure to the industrials and technology sectors while reducing exposure to the consumer discretionary and communication services sectors. The Redwood portfolio is currently leading its benchmark for the one-year period but continues to underperform against its benchmark since inception (09/16).

Smith, Graham & Co. (Mid-Cap Value)

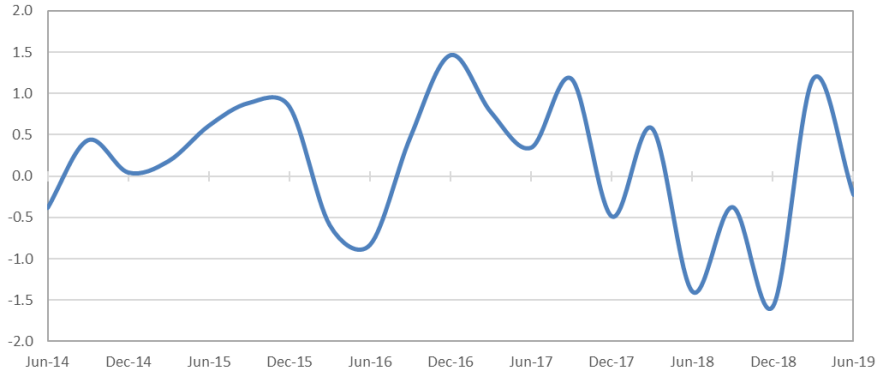
- Smith, Graham & Co. manages the Fund's mid-cap value portfolio, which was funded in December of 2017. The mid-cap portfolio returned 1.61% (net of fees) during the second quarter, underperforming its benchmark (Russell Mid Cap Index) which returned 4.13%. During the quarter, the portfolio's strongest sector performance relative to the Russell Midcap Index sectors was in: consumer staples, energy and financial services. The portfolio sectors with the weakest performance compared to the Russell Midcap Index sectors were: consumer discretionary, materials & processing and technology. The stocks that contributed the most to absolute performance during the quarter were: Total System Services Jabil AECOM, Gentex and W.R. Berkley. The stocks that detracted the most from absolute performance were: Abercrombie & Fitch, Bed Bath & Beyond, Chico's FAS, United States Steel and Designer Brands Inc. During the quarter, one new position was established: Textron and Total System Services was eliminated following the announcement of an acquisition by Global Payments. At the end of June, the portfolio was diversified among 68 securities, none exceeding a 2.3% position. The 10 largest holdings represented approximately 20% of the total portfolio. Sector weightings were within plus/minus five percentage points of the Russell Midcap Index. Cash represented approximately 1.2% of the portfolio on June 30th. After completing its first full year of performance within the Fund the Smith Graham portfolio trails its benchmark since inception (12/17).

International Equity Overview

International Equity Structure



International Equity Composite
Quarterly Excess Return



International Equity Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total International Equity (Gross)	**$ 500.8**	**2.62**	**14.52**	**-0.67**	**10.10**	**3.25**	**8.57**
Total International Equity (Net)		**2.51**	**14.28**	**-1.11**	**9.61**	**2.81**	**8.10**
Custom Benchmark [1]		2.74	13.33	0.26	9.16	2.25	6.71
Net of Fee Value Added vs Benchmark		*-0.23*	*0.95*	*-1.37*	*0.45*	*0.56*	*1.39*
MSCI ACWI x-US IMI (Net)		2.74	13.33	0.26	9.16	2.25	6.77
MSCI ACWI x-US (Net)		2.98	13.60	1.29	9.39	2.16	6.54
MSCI EAFE (Net)		3.68	14.03	1.08	9.11	2.25	6.90
MSCI Emerging Markets		0.61	10.59	1.21	10.66	2.49	5.81

International Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Int'l Small Cap - Active								
Acadian International (Gross)	**$ 103.4**	**3.29**	**15.92**	**-3.68**	**11.72**	**4.89**	**8.79**	**Mar-89**
Acadian International (Net)		**3.15**	**15.59**	**-4.36**	**11.10**	**4.34**	**8.34**	**Mar-89**
Custom Benchmark + 2%		1.71	12.60	-3.94	9.76	4.77	7.77	Mar-89
Net of Fee Value Added vs Objective		*1.44*	*2.99*	*-0.42*	*1.34*	*-0.43*	*0.57*	
Custom Benchmark		1.21	11.60	-5.94	7.76	2.77	5.77	Mar-89
Net of Fee Value Added vs Benchmark		*1.94*	*3.99*	*1.58*	*3.34*	*1.57*	*2.57*	
Information Ratio				**0.56**	**0.84**	**0.44**		
Sharpe Ratio				**-0.36**	**0.72**	**0.25**		

[2] International Equity Custom Benchmark: MSCI ACWI x-US IMI (2q10 – Present); MSCI ACWI x-US (1q99 – 1q10); Wilshire Non-US/Non-SA (2q96 – 4q98); MSCI EAFE (4q89 – 1q96)

[3] Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3q09 – Present); MSCI EAFE Small Cap (4q99 – 2q09); S&P/Citigroup Eur/Pac EMI Index (2q96 – 3q99); MSCI EAFE (2q89 – 1q96). Performance Objective: Custom Benchmark +2% (1q05 – Present); +1% (2q89 – 4q04).

International Equity Overview (Continued)

International Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Int'l Enhanced Index								
AQR Capital Management (Gross)	**$ 197.7**	**0.55**	**12.55**	**-2.74**	**8.91**	**2.78**	**3.62**	**Mar-06**
AQR Capital Management (Net)		**0.41**	**12.23**	**-3.30**	**8.29**	**2.17**	**3.09**	**Mar-06**
Custom Benchmark + 1.5%		3.35	14.35	2.79	10.89	3.66	4.31	Mar-06
Net of Fee Value Added vs Objective		*-2.94*	*-2.12*	*-6.09*	*-2.60*	*-1.49*	*-1.22*	
Custom Benchmark		2.98	13.60	1.29	9.39	2.16	2.81	Mar-06
Net of Fee Value Added vs Benchmark		*-2.57*	*-1.37*	*-4.59*	*-1.10*	*0.01*	*0.28*	
Information Ratio				**-1.57**	**-0.39**	**0.01**		
Sharpe Ratio				**-0.31**	**0.54**	**0.10**		
Int'l Developed								
Ativo International Developed (Gross) *	**$ 35.8**	**5.02**	**15.69**	**2.25**	**-.-**	**-.-**	**1.05**	**Dec-17**
Ativo International Developed (Net) *		**4.87**	**15.35**	**1.63**	**-.-**	**-.-**	**0.51**	**Dec-17**
MSCI EAFE Index + 2%		4.18	15.02	3.08	-.-	-.-	0.87	
Net of Fee Value Added vs Objective		*0.69*	*0.33*	*-1.45*			*-0.36*	
MSCI EAFE Index		3.68	14.03	1.08	-.-	-.-	-1.13	
Net of Fee Value Added vs Benchmark		*1.19*	*1.32*	*0.55*			*1.64*	
Information Ratio				**0.18**	**-.-**	**-.-**		
Sharpe Ratio				**-0.04**	**-.-**	**-.-**		
Int'l Equity (Active)								
Baillie Gifford (Gross)	**$ 83.1**	**5.86**	**-.-**	**-.-**	**-.-**	**-.-**	**5.86**	**Mar-19**
Baillie Gifford (Net)		**5.82**	**-.-**	**-.-**	**-.-**	**-.-**	**5.82**	**Mar-19**
MSCI ACWI x-US (Net) + 2%		3.48	-.-	-.-	-.-	-.-	3.48	
Net of Fee Value Added vs Objective		*2.34*					*2.34*	
MSCI ACWI x-US (Net)		2.98	-.-	-.-	-.-	-.-	2.98	
Net of Fee Value Added vs Benchmark		*2.84*					*2.84*	
Information Ratio				**-.-**	**-.-**	**-.-**		
Sharpe Ratio				**-.-**	**-.-**	**-.-**		
Int'l Equity (Active)								
Earnest Partners (Gross) *	**$ 80.8**	**2.64**	**-.-**	**-.-**	**-.-**	**-.-**	**2.64**	**Mar-19**
Earnest Partners (Net) *		**2.59**	**-.-**	**-.-**	**-.-**	**-.-**	**2.59**	**Mar-19**
MSCI ACWI x-US (Net) + 2%		3.48	-.-	-.-	-.-	-.-	3.48	
Net of Fee Value Added vs Objective		*-0.89*					*-0.89*	
MSCI ACWI x-US (Net)		2.98	-.-	-.-	-.-	-.-	2.98	
Net of Fee Value Added vs Benchmark		*-0.39*					*-0.39*	
Information Ratio				**-.-**	**-.-**	**-.-**		
Sharpe Ratio				**-.-**	**-.-**	**-.-**		

[5] AQR Custom Benchmark: MSCI ACWI x-US (2q10 – Present); MSCI EAFE (1q06 – 1q10); Performance Objective: Custom Benchmark + 1.5%.

- The Fund's international equity composite returned 2.51% (net of fees) during the second quarter of 2019, trailing the MSCI ACWI x-US Investable Market Index (IMI) which returned 2.74%. Active management was mixed across the board for the Fund's international equity program with Baillie Gifford, Ativo and Acadian all leading their respective benchmarks by a sizeable margin. The program's long-standing core international equity mandate managed by AQR faltered in the second quarter trailing its benchmark by a considerable margin ultimately leading to composite underperformance for the quarter. The recently funded Earnest Partners portfolio also trailed its benchmark during the period but only modestly. The international equity composite is currently outperforming against its benchmark for the year-to-date, three-, five- and ten-periods periods, as well as since inception (12/89).

Acadian (International Small-Cap)

- Acadian International manages the Fund's active small-cap international equity portfolio. During the second quarter the Acadian portfolio returned 3.15% (net of fees), outperforming against its benchmark (MSCI ACWI x-U.S. Small Cap) which returned 1.21%. For the second quarter, the portfolio outperformed its benchmark, as gains realized from stock selection were partially offset by value lost from country allocations. Key sources of positive active return included stock selection in Korea, Japan, and South Africa. Underweight positions in Switzerland and the Netherlands proved less successful, as did stock selection in France. Notable contributors during the period included Telkom, Asia Cement China Holdings, Ubiquoss, and Barco NV. Notable decliners during the period included Ubisoft Entertainment, Great Eagle Holdings and Swedish Orphan Biovitrum. As of quarter-end, the Acadian portfolio is outperforming against its benchmark for the one-, three- and five-year periods as well as since inception (3/89).

AQR Capital Management (International-ACWI X-US)

- AQR Capital manages the Fund's international equity portfolio. The AQR portfolio returned 0.41% (net of fees) during the second quarter, underperforming its benchmark (MSCI ACWI x-US) which returned 2.98%. Losses were driven by stock selection, although country and currency selection also detracted from performance. Within stock selection, the value theme was the main driver of underperformance for the quarter. Momentum also detracted from performance. Quality and sentiment modestly detracted over the period. Within stock selection, ability to pick stocks within sectors was the main detractor from performance. Stocks within industrials and consumer staples were the largest detractors. Stocks within information technology contributed to performance but did not offset losses. Sector selection also detracted from performance. All sectors modestly detracted from performance or were flat over the period. Following this quarter's results, the AQR portfolio is outperforming against its benchmark for five-, and ten-year periods as well as since inception (03/06).

Ativo (International Developed)

- Ativo manages the Fund's international developed equity portfolio. During the second quarter the Ativo portfolio returned 4.87 % leading the MSCI EAFE Index, which returned 3.68%. Outperformance was primarily due to stock selection, as the overall impact of regional and sector allocations was minimal. Stock selection produced alpha in the UK, Canada, and Developed Europe/Middle East ex-UK and was positive in most sectors, led by consumer staples, materials, and industrials. On the other hand, stock selection in Pacific ex-Japan and the consumer discretionary sector hurt performance versus the index. An overweight to real estate also subtracted a meaningful amount from relative returns; however, the impact was largely offset by favorable sector exposures, particularly overweights in technology and industrials. The only significant change to positioning during the quarter was adding to the portfolio's overweight in Canada. As of quarter end, the biggest overweights were in Canada, Pacific ex-Japan and the real estate and industrials sectors. The biggest underweights were in Japan, Developed Europe/Middle East ex-UK, financials, and consumer staples. After completing its first full year of performance within the Fund the Ativo portfolio currently leads its benchmark comfortably since inception (12/17).

Baillie Gifford (International Developed)

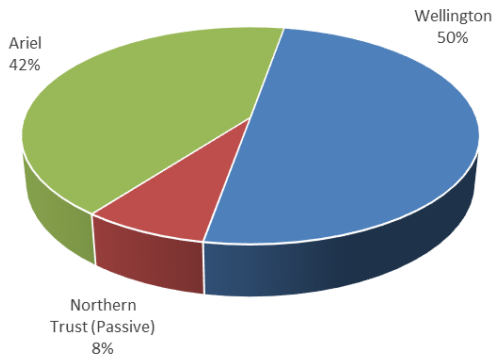
- Baillie Gifford manages one of the Fund's international developed equity portfolios. The portfolio outperformed the benchmark over the period, with stock selection being the main driver of relative outperformance. All regions delivered positive returns, with Europe the standout performer at a regional level; stock selection was particularly strong in Europe and Emerging Markets. On a relative basis, the portfolio's two largest overweight positions, in industrials and information technology, were the strongest contributors to performance, whilst underweight positions in consumer staples and healthcare were also beneficial. At a stock level, Mercado Libre, the Latin American ecommerce business, featured amongst the stand-out performers. The company has been investing heavily, and sensibly in its logistics network. In addition to larger delivery companies, small independent counterparts are now taking deliveries from Mercado Libre fulfilment centers, leading to significant improvements in delivery times and service levels. Meanwhile, the company continues to see significant opportunities via its FinTech business and payments platform. SAP, the German software company, also had a strong quarter in share price terms. The company enjoys the benefits of a very sticky customer base which provides sizeable recurring revenues. After completing its first quarter of performance within the Fund the Baillie Gifford portfolio currently leads its benchmark since inception (03/19)

Earnest (International Developed)

- Earnest manages one of the Fund's international developed equity portfolios. From a country perspective, although stock selection was positive in Asia, the portfolio's relative overweight to China detracted from performance for the quarter. China was among the worst performing countries in the benchmark as investors were focused on short-term trade tension with the U.S. Regionally, stock selection for the strategy was positive in Japan, the UK, and the Americas (ex U.S.). From a sector perspective for the benchmark, utilities, REITS and consumer staples have performed the best in the last 12 months, not due to the underlying fundamentals, but due to their higher dividend yields in a low interest rate environment. Although the portfolio generated positive stock selection over the last 12 months among these sectors as a group, the portfolio remains relatively underweight to these three sectors, which detracted from performance during the period. Stock selection was also positive among health care and industrials over the last 12 months for the Fund. After completing its first quarter of performance within the Fund the Earnest portfolio currently trails its benchmark since inception (03/19).

Global Equity Overview

Global Equity Structure



Global Equity Composite

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	10-year
		Performance					
Total Global Equity (Gross)	**$ 254.6**	**3.02**	**15.87**	**4.14**	**12.12**	**6.10**	**-.-**
Total Global Equity (Net)		**2.88**	**15.55**	**3.58**	**11.63**	**5.61**	**-.-**
MSCI ACWI (Net)		3.61	16.23	5.74	11.62	6.16	-.-
Net of Fee Value Added vs Index		*-0.73*	*-0.68*	*-2.16*	*0.01*	*-0.55*	
MSCI ACWI IMI (Net)		3.37	16.08	4.56	11.41	6.03	10.32
MSCI ACWI (Net)		3.61	16.23	5.74	11.62	6.16	10.15
MSCI World (Net)		4.00	16.98	6.33	11.76	6.60	10.71

Global Equity Managers

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
		Performance (%)						
Global Equity - Active								
Wellington (Gross)	**$ 127.4**	**4.13**	**19.72**	**3.91**	**12.17**	**7.79**	**12.32**	**Jan-00**
Wellington (Net)		**3.98**	**19.37**	**3.33**	**11.52**	**7.18**	**11.70**	**Aug-12**
MSCI ACWI (Net) + 2%		4.11	17.22	7.74	13.62	8.16	11.56	Aug-12
Net of Fee Value Added vs Objective		*-0.13*	*2.15*	*-4.41*	*-2.10*	*-0.98*	*0.14*	
MSCI ACWI (Net)		3.61	16.23	5.74	11.62	6.16	9.56	Aug-12
Net of Fee Value Added vs Benchmark		*0.37*	*3.14*	*-2.41*	*-0.10*	*1.02*	*2.14*	
Information Ratio				**-0.59**	**-0.03**	**0.29**		
Sharpe Ratio				**0.05**	**0.76**	**0.48**		
Global Equity - Active								
Ariel (Gross) *	**$ 107.9**	**1.66**	**11.55**	**4.29**	**-.-**	**-.-**	**3.87**	**Dec-17**
Ariel (Net) *		**1.50**	**11.21**	**3.65**	**-.-**	**-.-**	**3.31**	**Dec-17**
MSCI ACWI (Net) + 1.5%		3.99	16.98	7.24	-.-	-.-	4.99	
Net of Fee Value Added vs Objective		*-2.49*	*-5.77*	*-3.59*			*-1.68*	
MSCI ACWI (Net)		3.61	16.23	5.74	-.-	-.-	3.49	
Net of Fee Value Added vs Benchmark		*-2.11*	*-5.02*	*-2.09*			*-0.18*	
Information Ratio				**-0.57**	-.-	-.-		
Sharpe Ratio				**0.08**	-.-	-.-		
Global Equity - Passive								
Northern Trust (Gross)	**$ 19.4**	**3.52**	**16.34**	**5.00**	**11.90**	-.-	**11.33**	**Oct-15**
Northern Trust (Net)		**3.52**	**16.30**	**4.94**	**11.83**	-.-	**11.28**	**Oct-15**
MSCI ACWI IMI (Net)		3.37	16.08	4.56	11.41	-.-	10.83	Oct-15
Net of Fee Value Added vs Benchmark		*0.15*	*0.22*	*0.38*	*0.42*		*0.45*	

Global Equity Overview (Continued)

- The global equity composite is comprised of an actively-managed strategy (with a U.S. bias relative to the benchmark) managed by Wellington. This strategy is complemented by a passively-managed strategy provided by Northern Trust. The composite also recently added an exposure to the Ariel Global Product strategy which has recently completed its first full year of performance. The new structure favors active management (currently 92% active/8% passive) versus the previous 50%/50% allocation between active and passively managed funds within the composite. During the second quarter the recently funded Ariel strategy underperformed the benchmark while the Wellington strategy outperformed the benchmark. The global equity composite is currently outperforming over the three-year period but continues to trail its benchmark over longer time periods including since inception (9/12).

Wellington (Active)

- Wellington manages one of the Fund's active global equity portfolio. During the second quarter, the Wellington portfolio returned 3.98% (net of fees), outperforming its benchmark (MSCI ACWI Index) which returned 3.61%. The Global Opportunities portfolio modestly outperformed the benchmark in the second quarter, primarily due to positive stock selection in consumer staples and industrials. Sector allocation effects did not have a material impact on relative performance for the period. Walmart, a US-based retail and wholesale merchandiser of consumer products, was the leading contributor in consumer staples. The stock price rose following the company's shareholder meeting, as the company highlighted continued success across their businesses as a result of technological development. The portfolio's relative performance was offset by weak selection in financials, real estate, and energy. JPMorgan, a leading US-based universal bank, was the leading detractor within financials. During the quarter the team eliminated positions in Taiwan Semiconductor and Micron Technologies and established new positions in Harris Corporation, Parker-Hannifin, JPMorgan and Banco Santander. The Wellington portfolio is currently underperforming over the one- and three-year periods but continues to outperform the benchmark over the five-year period along with since inception (09/12).

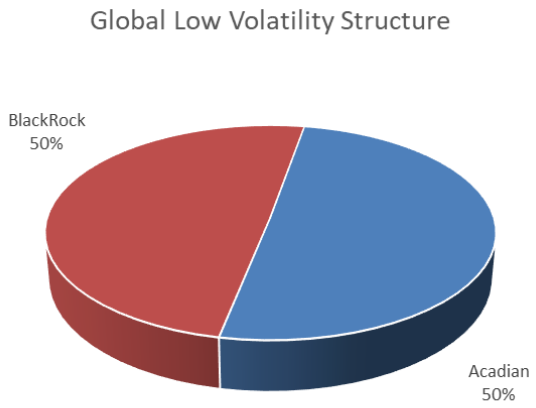
Ariel (Active)

- Ariel manages the Fund's second active global equity portfolio. During the period the Ariel portfolio returned 1.50% (net of fees), trailing its benchmark (MSCI ACWI Index) which returned 3.61%. Both stock selection and sector allocation positioning detracted from results relative to the benchmark during the period. From a stock picking perspective, the consumer staples and communication services sectors produced the biggest drag to both absolute and relative returns. The respective portfolio holdings posted negative returns in each segment versus modestly positive returns in that of the benchmark holdings. Baidu and China Mobile were the main stock level detractors in each sector. Meanwhile, sector positioning was modestly negative led by overweight to health care and an underweight to financials. Stock picking decisions in technology and financials was strong during the period but not impactful enough to outweigh relative losses elsewhere in the portfolio. Following this quarter's performance the Ariel portfolio now slightly trails its benchmark since inception (12/17).

Northern Trust (Passive)

- In late 2015 the Fund added a new global equity manager to the segment. Managed by Northern Trust, this strategy gives the Fund broadly diversified exposure to global stocks via a passively managed investment vehicle, which will result in lower turnover and costs incurred. At quarter-end the strategy represented approximately 8% of the segment's total value. After its third full year of performance, the Northern Trust portfolio continues to closely track the risk profile while modestly outperforming its benchmark index MSCI ACWI (+45) basis points since inception.

Global Low Volatility Equity Overview



Global Low Volatility Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total Global Low Volatility (Gross)	**$ 354.7**	**5.13**	**14.78**	**12.07**	**9.22**	**-.-**	**-.-**
Total Global Low Volatility (Net)		**5.08**	**14.67**	**11.90**	**9.03**	**-.-**	**-.-**
MSCI ACWI Minimum Volatility (Net)		4.07	14.43	13.00	8.75	-.-	-.-
Net of Fee Value Added vs Index		*1.01*	*0.24*	*-1.10*	*0.28*		
MSCI ACWI Minimum Volatility (Net)		4.07	14.43	13.00	8.75	8.87	11.39
MSCI World x-US Minimum Volatility (Net)		3.03	11.89	5.87	6.87	5.52	8.68
MSCI ACWI (Net)		3.61	16.23	5.74	11.62	6.16	10.15

Global Equity Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Global Low Volatility - Active								
Acadian Global Low Vol (Gross)	**$ 178.7**	**6.10**	**14.83**	**10.59**	**9.13**	**-.-**	**9.29**	**Jun-15**
Acadian Global Low Vol (Net)		**6.01**	**14.64**	**10.30**	**8.79**	**-.-**	**8.96**	**Jun-15**
MSCI ACWI (Net) + 2%		4.11	17.22	7.74	13.62	-.-	9.57	Jun-15
Net of Fee Value Added vs Objective		*1.90*	*-2.58*	*2.56*	*-4.83*		*-0.61*	
MSCI ACWI (Net)		3.61	16.23	5.74	11.62	-.-	7.57	Jun-15
Net of Fee Value Added vs MSCI ACWI		*2.40*	*-1.59*	*4.56*	*-2.83*		*1.39*	
MSCI ACWI Min Vol (Net)		4.07	14.43	13.00	8.75	-.-	9.44	Jun-15
Net of Fee Value Added vs MSCI ACWI Min Vol		*1.94*	*0.21*	*-2.70*	*0.04*		*-0.48*	
Information Ratio				**-0.66**	**0.01**	**-.-**		
Sharpe Ratio				**0.61**	**0.80**	**-.-**		
Global Low Volatility - Passive								
BlackRock Global Low Vol (Gross)	**$ 176.0**	**4.18**	**14.72**	**13.53**	**9.28**	**-.-**	**10.00**	**Jun-15**
BlackRock Global Low Vol (Net)		**4.17**	**14.70**	**13.49**	**9.26**	**-.-**	**9.98**	**Jun-15**
MSCI ACWI Min Vol (Net)		4.07	14.43	13.00	8.75	-.-	9.44	Jun-15
Net of Fee Value Added vs Benchmark		*0.10*	*0.27*	*0.49*	*0.51*		*0.54*	

***Acadian Info Ratio/Sharpe Ratio statistics based on MSCI ACWI Min Vol benchmark.**

Global Low Volatility Equity Overview (Continued)

- In 2015, the Board elected to transfer assets from existing strategies elsewhere in the Fund into two new global low volatility equity portfolios. The first portfolio is actively-managed and run by Acadian. Its primary mandate is to provide the Fund with a better risk/return profile relative to the broad MSCI ACWI, its primary benchmark (the Acadian portfolio's performance is also measured against the MSCI ACWI Minimum Volatility as a secondary benchmark). The second portfolio is a passively-managed index fund provided through BlackRock. Taken together, both funds will add diversification benefits to the existing suite of public equity managers. Since its inception within the Fund, the global low volatility equity composite is leading the MSCI ACWI Minimum Volatility Index.

Acadian (Global Low Volatility – Active)

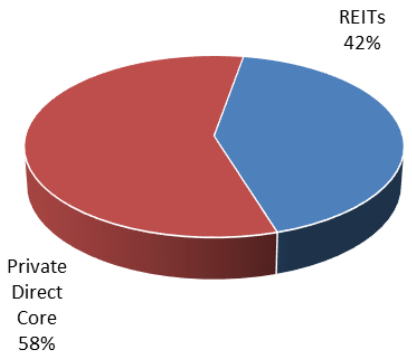
- Acadian manages the Fund's active global low volatility equity portfolio. The strategy recently completed its fourth year of performance within the Fund. During the second quarter, the Acadian portfolio returned 6.01% (net of fees). The portfolio's primary benchmark is the traditional cap-weighted MSCI All-Country World Index (ACWI). In addition, the portfolio is viewed in comparison to its secondary benchmark, the MSCI ACWI Minimum Volatility. The Acadian portfolio has wide dispersion in its economic sector allocations as compared to the cap-weighted index, potentially leading to a higher degree of tracking error (this difference is reduced when comparing against the secondary minimum volatility benchmark). During the quarter, the Acadian portfolio outpaced both the MSCI ACWI and MSCI ACWI Minimum Volatility index. The effect of the lower beta tilt relative to the index was positive for the quarter, contributing approximately 110 basis points. Stock selection in communication services contributed to results, driven by a lack of exposure to Alphabet. Stock selection in health care also contributed, led by an investment in Chemed. Offsetting these results to a degree was roughly 30 basis points of negative return from an underweight position in information technology, driven by a lack of exposure to Microsoft. The Acadian portfolio is currently outperforming its primary benchmark since inception (+139 bps) (07/15). Following this quarter's results the portfolio slightly trails its secondary minimum volatility benchmark since inception (-48 bps).

BlackRock (Global Low Volatility – Passive)

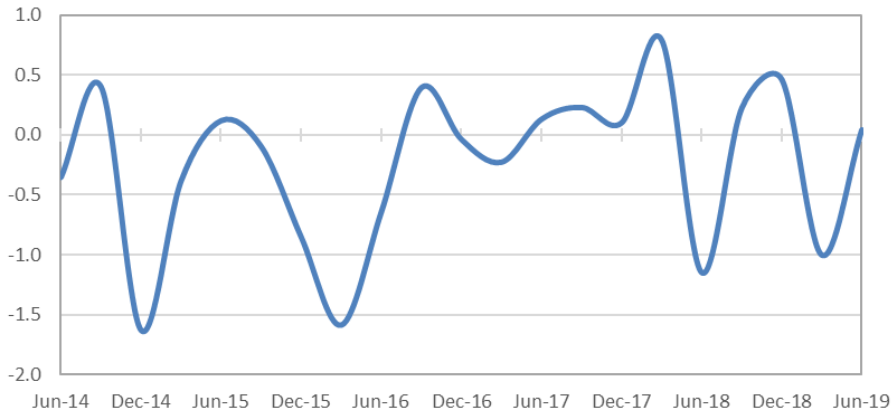
- BlackRock manages the Fund's passive global volatility equity strategy. The BlackRock portfolio is intended to provide a low-cost, highly diversified global equity investment strategy focused on minimizing volatility. The BlackRock portfolio is benchmark against the MSCI ACWI Minimum Volatility. To date, the portfolio continues to perform in line with expectations, closely tracking the risk profile of the benchmark index while outperforming the benchmark (+54 bps) since inception.

Real Estate Overview

Real Estate Structure



Total Real Estate Composite
Quarterly Excess Return



Real Estate Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total Real Estate (Gross)	**$ 408.5**	**1.97**	**9.65**	**8.81**	**5.80**	**8.67**	**16.10**
Total Real Estate (Net)		**1.82**	**9.33**	**8.20**	**5.17**	**7.98**	**15.32**
Custom Benchmark [1]		1.78	10.31	8.40	5.14	7.97	15.60
Net of Fee Value Added vs Benchmark		*0.04*	*-0.98*	*-0.20*	*0.03*	*0.01*	*-0.28*
REIT Strategies	$ 172.0	1.98	19.23	12.19	4.78	7.86	15.42
Private Core Real Estate	$ 236.5	1.75	2.66	5.32	5.52	7.91	-.-
Wilshire Real Estate Securities Index		1.62	17.90	10.47	4.30	8.16	15.84
NCREIF Open Diversified Core Equity (Net)		0.77	1.98	5.47	6.61	8.76	-.-

Real Estate Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Real Estate Securities - Public								
Adelante Capital Management (Gross)	**$ 86.0**	**2.14**	**20.09**	**13.42**	**5.89**	**8.66**	**10.67**	**Sep-01**
Adelante Capital Management (Net)		**1.99**	**19.75**	**12.78**	**5.29**	**8.04**	**10.09**	**Sep-01**
Wilshire Real Estate Securities + 1%		1.87	18.39	11.47	5.30	9.16	11.42	Sep-01
Net of Fee Value Added vs Objective		*0.12*	*1.36*	*1.31*	*-0.01*	*-1.12*	*-1.33*	
Wilshire Real Estate Securities		1.62	17.90	10.47	4.30	8.16	10.42	Sep-01
Net of Fee Value Added vs Index		*0.37*	*1.85*	*2.31*	*0.99*	*-0.12*	*-0.33*	
Information Ratio				**1.56**	**0.62**	**-0.06**		
Sharpe Ratio				**0.62**	**0.30**	**0.51**		
CenterSquare (Gross)	**$ 86.0**	**1.96**	**18.82**	**11.91**	**-.-**	**-.-**	**15.63**	**May-18**
CenterSquare (Net)		**1.84**	**18.55**	**11.45**	**-.-**	**-.-**	**15.19**	**May-18**
Wilshire Real Estate Securities + 1%		1.87	18.39	11.47	-.-	-.-	15.09	May-18
Net of Fee Value Added vs Objective		*-0.03*	*0.16*	*-0.02*			*0.10*	
Wilshire Real Estate Securities		1.62	17.90	10.47	-.-	-.-	14.09	May-18
Net of Fee Value Added vs Index		*0.22*	*0.65*	*0.98*			*1.10*	
Information Ratio				**1.00**	**-.-**	**-.-**		
Sharpe Ratio				**0.72**	**-.-**	**-.-**		

[6] Real Estate Custom Benchmark: 50% Wilshire RESI / 39% NCREIF ODCE NOF/11% Invesco Custom Benchmark (4q13 – Present); Wilshire RESI (4q89 – 4q10).

Real Estate Overview (Continued)

Real Estate Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Direct Core Real Estate - Private								
Heitman America Real Estate Trust (Gross)	$ 92.5	-0.32	1.22	4.28	6.89	9.33	11.88	Aug-10
Heitman America Real Estate Trust (Net)		-0.54	0.78	3.36	5.94	8.37	10.84	Aug-10
NCREIF Open-End Diversified Core (Net)		0.77	1.98	5.47	6.61	8.76	10.66	Aug-10
Net of Fee Value Added vs Index		*-1.31*	*-1.20*	*-2.11*	*-0.67*	*-0.39*	*0.18*	
Invesco Core Real Estate USA (Gross)	$ 77.9	1.27	2.62	7.99	8.91	11.14	12.16	Aug-10
Invesco Core Real Estate USA (Net)		1.05	2.18	7.10	7.99	10.19	11.18	Aug-10
NCREIF Open-End Diversified Core (Net)		0.77	1.98	5.47	6.61	8.76	10.66	Aug-10
Net of Fee Value Added vs Index		*0.28*	*0.20*	*1.63*	*1.38*	*1.43*	*0.52*	
Invesco II	$ 66.0	6.02	6.02	6.02	1.55	1.46	0.83	Oct-13

- The Fund's total real estate composite is comprised of both public market real estate securities (REITs) and private investment in direct core real estate. The total segment returned 1.82% (net of fees) during the second quarter, edging its benchmark (split 50% Wilshire Real Estate Securities Index, 39% NCREIF Open-End Diversified Core Index and 11% Invesco II Custom Benchmark) which returned 1.78%. On the public side, both REIT exposures outperformed the Wilshire Real Estate Securities Index. On the private side, Invesco led the benchmark during the period while Heitman was unable to keep pace with the NCREIF ODCE Index. Currently, the Fund's total real estate composite is outperforming its benchmark over the three- and five-year period but continues to trail the benchmark since inception (12/89).

Adelante Capital Management (REIT)

- Adelante Capital manages one of the Fund's real estate securities (REIT) portfolios. During the second quarter, the Adelante portfolio returned 1.99% (net of fees), outperforming its benchmark index (Wilshire Real Estate Securities) which returned 1.62%. For the third quarter in a row, security selection was the main driver of outperformance relative to the benchmark. Stock selection was most additive within the industrials, hotel and local retail segments of the market. Here the portfolio holdings delivered returns ahead of the respective benchmark holdings. Similarly, albeit on a lesser scale the portfolio's regional retail, manufactured homes and health care holdings posted returns above that of their respective benchmark holdings. Sector positioning was flat during the period, the portfolio benefitted from an overweight to the industrial and real estate services sectors. During the period the portfolio purchased three new issues (Invitation Homes, Paramount Group and Interxion Holdings) and sold two securities (Cushman & Wakefield and Hilton Grand Vacations). The portfolio is currently leading its benchmark over the one- and three-year periods but trails its benchmark since inception (09/01).

CenterSquare (REIT)

- CenterSquare manages the Fund's recently hired real estate securities (REIT) portfolio. For the quarter stock selection and sector selection contributed to alpha. Stock selection was particularly strong in data center, health care, and net lease. The portfolio benefitted from its overweight position in healthcare REIT, Ventas, as it made a series of accretive acquisitions and held an investor day late in the quarter that increased investors' expectations of more robust earnings growth in 2020. Within the data center sector, the portfolio's purchase of Digital Realty Trust and overweight position to Cyrus One contributed to alpha in Q2 as the company moved passed an equity overhang that had hampered the stock's performance earlier in the year. In net lease, the portfolio's modest overweight to Vereit also served the portfolio well. This stock selection alpha however, was partially offset by underperformance in specialty name Iron Mountain, which has underperformed in a low-performing sector. Sector selection alpha contributions were broadly positive, but the most significant came from an overweight position in alternative housing and an

underweight position in the regional mall sector. The retail sector, specifically regional malls, underperformed materially as the industry continued to face challenges related to heightened store closures from retailers struggling to compete with the growth of e-commerce. From a positioning perspective, alternative housing and net lease were the largest overweights. In apartments, management shifted from underweight to neutral through a purchase of Avalon Bay Communities and Mid-America Apartment Communities. In healthcare, the team reduced the underweight by adding to existing position in Ventas, as previously mentioned. The decrease in interest rates served to benefit more bond-like, longer-dated lease structures which are common in the healthcare sector. Lastly, CenterSquare shifted from neutral to underweight in regional malls by trimming existing positions in both the Macerich Co and Simon Property Group. Following this quarter's results, the CenterSquare portfolio is currently leading its benchmark since inception (04/18).

Heitman (Direct Core Real Estate)

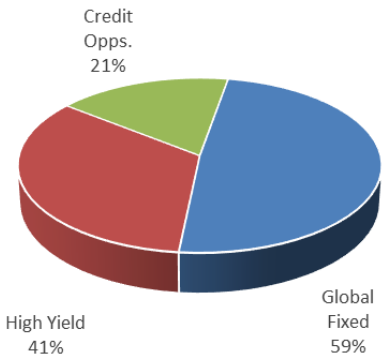
- Heitman manages one of the Fund's three direct core real estate portfolios. The Heitman portfolio returned -0.54% (net of fees) during the second quarter, underperforming its benchmark (NCREIF Open End Diversified Core Index) which returned 0.77%. Heitman achieved a gross return of -0.32% in the second quarter of 2019, comprised of 1.13% in income and -1.45% in appreciation. The depreciation return included -86 basis points of property valuation, and -59 basis points of debt marking-to-market. The reduction in property valuation was driven by the retail sector assets, primarily attributable to the Fund's regional mall investments. The reduction in debt valuation was driven by lower underlying interest rates. The Fund anticipates paying a dividend in July of around $13.38 per share, providing investors with additional yield. At quarter end the portfolio's allocation is well diversified across the apartment (22% allocation), office (27%), retail (20%), self-storage (20%) and industrial (11%) segments of the market. The portfolio is also well diversified across the U.S. geographical landscape allocating 37% of the portfolio to the Western region of the U.S., 22% to the Southern region, 17% to the Midwest region and 24% to the Eastern region of the country. No transactions were completed during the quarter. The Fund has an industrial building in the Dallas market under contract, which is expected to close during the third quarter. Following this quarter's results, the Heitman portfolio is currently trailing its benchmark over the one-, three- and five-year periods but continues to lead its benchmark since inception (08/10).

Invesco Core Real Estate-USA (Direct Core Real Estate)

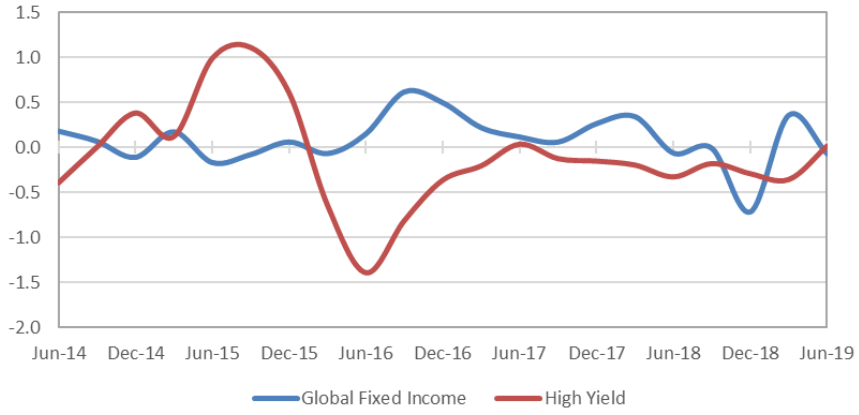
- Invesco manages two of the Fund's three direct core real estate portfolios. The Invesco Core Real Estate-USA portfolio returned 1.05% (net of fees) during the second quarter, leading its benchmark (NCREIF Open End Diversified Core Index) which returned 0.77%. The total gross return comprised of 0.91% income and 0.13% appreciation. Due to the continued and meaningful decline in interest rates, debt mark-to-market had a negative 43 bps impact to the current quarter return and a negative 66 bps impact to the one-year return. Write-downs on SoHo retail assets also weighed on performance (-40 bps) due to downward market rent adjustments despite the A+ location. The Fund has proactively addressed Retail valuations and has "taken the pain;" ICRE's retail NOI is solid and the Fund's retail assets remain "retail with a future." CRE continues to experience income and dividend growth, with an increase in quarterly NOI of $8M and an increase in the quarterly dividend of $13M when compared to the same quarter last year. The Fund closed on two add-on acquisitions to existing investments; 109 Smith, an add-on to The Quad in Cambridge, MA and SVT 2, a land parcel adjacent to Sunset Vine Tower in Hollywood, CA. In addition, the Fund paid-off the loan on 131-137 Spring Street, refinanced two construction loans and closed on three long-term, unsecured private placement notes. The Invesco portfolio is currently outperforming its benchmark over all extended time periods including since inception (08/10).

Fixed Income Overview

Fixed Income Structure



Global Fixed Income and High Yield Quarterly Excess Return



Fixed Income Composites

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	10-year
		Performance					
Global Fixed Income (Gross)	**$ 511.1**	**3.06**	**6.52**	**7.67**	**3.10**	**3.49**	**5.12**
Global Fixed Income (Net)		**3.01**	**6.41**	**7.44**	**2.88**	**3.30**	**4.92**
Bloomberg Aggregate Bond Index		3.08	6.11	7.87	2.31	2.95	3.90
Net of Fee Value Added vs Benchmark		*-0.07*	*0.30*	*-0.43*	*0.57*	*0.35*	*1.02*
High Yield (Gross)	**$ 355.1**	**2.51**	**9.80**	**6.89**	**6.84**	**4.55**	**8.55**
High Yield (Net)		**2.39**	**9.55**	**6.37**	**6.33**	**4.05**	**8.04**
Custom Benchmark [1]		2.37	9.89	7.21	7.31	4.34	8.79
Net of Fee Value Added vs Benchmark		*0.02*	*-0.34*	*-0.84*	*-0.98*	*-0.29*	*-0.75*
Bloomberg Aggregate		3.08	6.11	7.87	2.31	2.95	3.90
Citigroup High Yield Cash Pay		2.37	9.89	7.21	7.31	4.34	8.79
BofA ML High Yield Master II		2.56	10.16	7.60	7.54	4.70	9.22

Global Fixed Income Managers

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
		Performance (%)						
Global Fixed Income								
Securian Asset Mgmt. (Gross)	**$ 219.5**	**3.05**	**6.61**	**7.90**	**3.51**	**3.89**	**4.91**	**May-07**
Securian Asset Mgmt. (Net)		**3.00**	**6.52**	**7.71**	**3.33**	**3.71**	**4.74**	**May-07**
Bloomberg Aggregate + 0.5%		3.20	6.36	8.37	2.81	3.45	4.84	**May-07**
Net of Fee Value Added vs Objective		*-0.20*	*0.16*	*-0.66*	*0.52*	*0.26*	*-0.10*	
Bloomberg Aggregate		3.08	6.11	7.87	2.31	2.95	4.34	**May-07**
Net of Fee Value Added vs Benchmark		*-0.08*	*0.41*	*-0.16*	*1.02*	*0.76*	*0.40*	
Information Ratio				**-0.18**	**1.50**	**1.26**		
Sharpe Ratio				**1.78**	**0.71**	**1.04**		
Aberdeen (Gross)	**$ 219.4**	**3.35**	**7.02**	**8.06**	**2.94**	**3.16**	**4.98**	**Apr-07**
Aberdeen (Net)		**3.29**	**6.89**	**7.81**	**2.70**	**2.97**	**4.76**	**Apr-07**
Bloomberg Aggregate + 0.5%		3.20	6.36	8.37	2.81	3.45	4.69	Apr-07
Net of Fee Value Added vs Objective		*0.09*	*0.53*	*-0.56*	*-0.11*	*-0.48*	*0.07*	
Bloomberg Aggregate		3.08	6.11	7.87	2.31	2.95	4.19	Apr-07
Net of Fee Value Added vs Benchmark		*0.21*	*0.78*	*-0.06*	*0.39*	*0.02*	*0.57*	
Information Ratio				**-0.04**	**0.43**	**0.02**		
Sharpe Ratio				**1.58**	**0.43**	**0.71**		

[7] High Yield Custom Benchmark: Citigroup High Yield Cash Pay (4q99 – Present); Citigroup High Yield Composite Index (1q97 – 3q99).

Fixed Income Overview (Continued)

Global Fixed Income Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
Global Fixed Income								
Garcia Hamilton (Gross)	**$ 72.2**	**2.24**	**4.77**	**5.82**	**2.41**	**3.31**	**3.74**	**Oct-13**
Garcia Hamilton (Net)		**2.17**	**4.64**	**5.55**	**2.15**	**3.04**	**3.48**	**Oct-13**
Bloomberg Aggregate + 0.5%		3.20	6.36	8.37	2.81	3.45	3.63	Oct-13
Net of Fee Value Added vs Objective		*-1.03*	*-1.72*	*-2.82*	*-0.66*	*-0.41*	*-0.15*	
Bloomberg Aggregate		3.08	6.11	7.87	2.31	2.95	3.13	Oct-13
Net of Fee Value Added vs Benchmark		*-0.91*	*-1.47*	*-2.32*	*-0.16*	*0.09*	*0.35*	
Information Ratio				**-2.00**	**-0.16**	**0.08**		
Sharpe Ratio				**1.27**	**0.32**	**0.76**		

- The Fund's global fixed income segment returned 3.01% (net of fees) during the second quarter of 2019, slightly trailing the Bloomberg Aggregate Bond Index, which returned 3.08%. The segment is comprised of three actively managed strategies: (1) Securian Asset Management (previously Advantus Capital Management), (2) Aberdeen Asset Management, and (3) Garcia Hamilton. During the period, one of the three actively managed portfolios *(Aberdeen)* led the Bloomberg Aggregate Index. Securian and Aberdeen (both with early 2007 inception dates) manage roughly the same level of assets for the Fund while the Garcia Hamilton portfolio has a smaller mandate. Therefore, quarter to quarter performance is largely driven by the results of the Securian and Aberdeen accounts while the Garcia Hamilton account does not have the ability to move the needle as much, so to speak, on account of its smaller size. Following this period's results the global fixed income composite continues to outperform against the Bloomberg Aggregate over the three-, five- and ten-year periods.

Securian Asset Management (Core Fixed Income)

- Securian Asset Management (*formerly Advantus*) manages one of the Fund's three global fixed income portfolios. During the second quarter, the Securian portfolio returned 3.00% (net of fees), underperforming its benchmark (Bloomberg Aggregate) which returned 3.08% for the quarter. Overall results have been quite strong, considering a shorter duration positioning relative to the index has been a significant headwind in 2019. Security selection and asset allocation decisions yielded strong excess returns in the second quarter and through the first half of 2019. Overall exposure to corporate bonds increased by approximately 2.5 percent during the quarter. The portfolio remains overweight financials, utilities and industrials. Exposure to the securitized sector increased by 5 percent during the quarter. The largest increases came in Auto ABS and non-Agency MBS. The recent increase in investment policy capacity in Rule 144a securities has allowed Securian to find attractive structured securities that reflect their thoughts on consumer strength. The portfolio is overweight ABS, CMBS and non-Agency MBS, while it remains underweight Agency MBS. Lastly, portfolio duration was largely unchanged during the quarter and currently is two-tenths of a year short of the benchmark's duration. The Securian portfolio is currently outperforming against its benchmark over the three- and five-year periods as well as since inception (06/07).

Fixed Income Overview (Continued)

Aberdeen (Core Fixed Income)

- Aberdeen manages another of the Fund's global fixed income portfolios. During the second quarter the Aberdeen portfolio returned 3.29% (net of fees), outperforming its benchmark the Bloomberg Aggregate Index which returned 3.08% during the period. Many of the same themes that aided the fund in Q1 helped relative results in Q2. In the Fund's core segment, U.S. Treasury yield-curve positioning, asset allocation and security selections all contributed to performance for the quarter. The Fund's slightly long duration position via an overweight to the intermediate part of the yield curve had a positive impact on performance. Fund performance was also bolstered by a sizeable underweight position in U.S. Treasuries versus the benchmark, along with an overweight allocation to commercial mortgage-backed securities (CMBS). An underweight position in investment-grade corporate bonds was modestly detractive, as corporates again produced solid gains during the period. Security selection across segments was also positive for the period. The Aberdeen portfolio continues to outperform against its benchmark over the three-, five- and since inception periods (06/07).

Garcia Hamilton (Core Fixed Income)

- Garcia Hamilton is the Fund's third global fixed income manager. During the second quarter, the portfolio returned 2.17% (net of fees), underperforming its benchmark index (Bloomberg Aggregate Index) which returned 3.08%. As of quarter end, the account held approximately 60% in the corporate sector versus the index weighting of 25%. In the agency and agency MBS sectors, the account held approximately 11% and 7% versus the benchmark weightings of 6% and 27%, respectively. Duration and yield curve positioning detracted from relative performance this quarter as the team continued to maintain a shorter duration than the benchmark and a barbell positioning, but rates declined and the curve steepened. However, the portfolio received a positive contribution from sector positioning as the Fund was underweight the Treasury sector and the MBS, and both sectors underperformed. Despite the portfolio's defensive positioning, the yield of the portfolio was marginally higher than the index as floating rate securities exposure provided attractive income relative to fixed rate securities. Garcia Hamilton disagrees with the notion that a recession is imminent because money supply is expanding rapidly which will fuel the economy, leading economic indicators are positive, and the labor market is very healthy. Therefore, the team believes rates have the bias to move *higher* as the economy continues to grow and exceed market expectations. The Garcia Hamilton portfolio is currently outperforming against its benchmark over the five-year period as well as since inception (12/13).

Fixed Income Overview (Continued)

High Yield/Credit Opportunities Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
High Yield								
Oaktree Capital Management (Gross)	**$ 176.9**	**2.25**	**9.44**	**6.18**	**6.47**	**4.00**	**7.23**	**Dec-96**
Oaktree Capital Management (Net)		**2.13**	**9.17**	**5.64**	**5.95**	**3.48**	**6.72**	**Dec-96**
Performance Objective		2.62	10.39	8.21	8.31	5.34	7.92	Dec-96
Net of Fee Value Added vs Objective		*-0.49*	*-1.22*	*-2.57*	*-2.36*	*-1.86*	*-1.20*	
Custom Benchmark		2.37	9.89	7.21	7.31	4.34	6.92	Dec-96
Net of Fee Value Added vs Benchmark		*-0.24*	*-0.72*	*-1.57*	*-1.36*	*-0.86*	*-0.20*	
Information Ratio				**-4.02**	**-2.18**	**-1.21**		
Sharpe Ratio				**0.48**	**0.99**	**0.46**		
BlackRock High Yield (Gross)	**$ 178.2**	**2.76**	**10.17**	**7.61**	**7.20**	**4.64**	**6.91**	**Sep-06**
BlackRock High Yield (Net)		**2.65**	**9.92**	**7.10**	**6.71**	**4.14**	**6.43**	**Sep-06**
Citigroup High Yield Cash Pay + 1%		2.62	10.39	8.21	8.31	5.34	8.01	Sep-06
Net of Fee Value Added vs Objective		*0.03*	*-0.47*	*-1.11*	*-1.60*	*-1.20*	*-1.58*	
Citigroup High Yield Cash Pay		2.37	9.89	7.21	7.31	4.34	7.01	Sep-06
Net of Fee Value Added vs Benchmark		*0.28*	*0.03*	*-0.11*	*-0.60*	*-0.20*	*-0.58*	
Information Ratio				**-0.21**	**-1.10**	**-0.11**		
Sharpe Ratio				**0.72**	**1.25**	**0.64**		
Credit Opportunities								
Neuberger Berman (Gross)	**$ 179.5**	**2.76**	**8.93**	**7.76**	**6.90**	**-.-**	**8.03**	**Jan-16**
Neuberger Berman (Net)		**2.68**	**8.74**	**7.42**	**6.60**	**-.-**	**7.76**	**Jan-16**
Custom Benchmark + 1%		3.01	9.53	8.96	7.10	-.-	9.01	Jan-16
Net of Fee Value Added vs Objective		*-0.33*	*-0.79*	*-1.54*	*-0.50*		*-1.25*	
Custom Benchmark		2.76	9.03	7.96	6.10	-.-	8.01	Jan-16
Net of Fee Value Added vs Benchmark		*-0.08*	*-0.29*	*-0.54*	*0.50*		*-0.25*	
Information Ratio				**-0.41**	**0.40**	**-.-**		
Sharpe Ratio				**0.91**	**1.28**	**-.-**		

- The high yield composite returned 2.39% (net of fees) during the second quarter, outperforming against the Citigroup High Yield Cash Pay Index, which returned 2.37%. The composite is currently split equally between the two actively-managed strategies. During the period, BlackRock edged out the benchmark while Oaktree modestly trailed the benchmark. The high yield composite is currently underperforming its benchmark over all extended time periods greater than one year including since inception (03/97).

[8] Oaktree Capital Management Performance Objective: Citigroup High Yield Cash Pay + 1% (4q99 – Present); Citigroup High Yield Composite Index + 1% (2q97 – Present).

Oaktree Capital Management (High Yield Fixed Income)

- Oaktree Capital manages one of the Fund's two high yield fixed income portfolios. The Oaktree portfolio returned 2.13% (net of fees) during the second quarter, underperforming its benchmark (Citigroup High Yield Cash Pay) which returned 2.37%. High yield bonds didn't enjoy the same tailwinds as their longer-duration counterparts, but they still managed to turn in an above-coupon return for the second consecutive quarter. The portfolio performed essentially in line with the benchmark during the second quarter on a gross of fee basis. While management would like to gain an edge in every market environment, the defensively positioned portfolio typically performs best when risk aversion increases and defaults are on the rise – not a description of the second quarter. Just six issuers defaulted on $7.7 billion of bonds in the second quarter, bringing the rolling-four quarter default rate to 1.4%, well below the 3.7% long-term average. Oaktree is pleased to report they suffered no defaults during the quarter. Oaktree portfolio is currently underperforming over the one-, three- and five-year periods, as well as since inception (03/97).

BlackRock (High Yield Fixed Income)

- BlackRock manages the Fund's other high yield fixed income portfolio. During the second quarter, the BlackRock portfolio returned 2.65%, leading its benchmark (Citigroup High Yield Cash Pay) which returned 2.37%. Similar to its companion strategy managed by Oaktree, the BlackRock portfolio exhibits a more defense structure relative to the benchmark but is not afraid to dip into C-CCC rated issues (currently (13.8% vs 13.2% in that of the benchmark). Higher quality names led the market during the second quarter. The portfolio's more defensive posture relative to the benchmark should perform better in an environment where quality issues are in favor. Modest contributions from sector/issue selection and interest rate positioning also accrued favorably to results versus the benchmark. The BlackRock portfolio is currently underperforming over the one-, three- and five-year periods as well as since inception period (09/06).

Neuberger Berman (Credit Opportunities)

- Neuberger Berman manages the Fund's credit opportunities portfolio. During the beginning of 2016 the Neuberger Berman Credit Opportunities portfolio was funded to further diversify the plan's fixed income basket. Now in its fourth year of performance the portfolio returned 2.68% for the period, slightly trailing its custom benchmark (*33% ML High Yield Master II Index/33% S&P LSTA Leveraged Loan Index/33% JPM EMBI Global Diversified Index*) which returned 2.76%. Sector positioning within U.S. rates and loans markets were the main detractors this period relative to the benchmark. Meanwhile, security selection was negative within emerging markets exposures modestly detracting from results. Contributors during the period included sector positioning in investment grade credit, CLOs and Pan European high yield credit. As of quarter end, the portfolio maintained a notable overweight to Latin America with underweight allocations to the U.S. and Asia Ex-Japan regions. Meanwhile, the credit quality of the portfolio (BB) matched that of the benchmark, such that this was not a meaningful source of added or detracted value. The Neuberger Berman portfolio is currently leads its benchmark over the three-year period but is slightly underperforming its custom benchmark since inception (01/16).

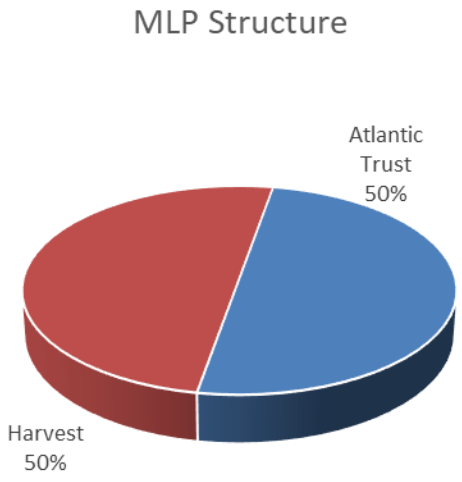
Private Equity Overview

Private Equity Composite

	Total Commitment	Cumulative Capital Called		Cumulative Distributions	Capital Balance	Multiple	Calculated IRR
Hamilton Lane Fund VII LP (Series A)	30,000,000	25,297,247	84.3%	21,549,263	18,116,575	1.57	10.5%
Hamilton Lane Fund VII LP (Series B)	20,000,000	17,695,467	88.5%	8,069,533	11,240,061	1.09	2.0%
Hamilton Lane Fund VII LP (Total)	*50,000,000*	*42,992,714*	86.0%	*29,618,796*	*29,356,636*	1.37	7.1%
Hamilton Lane Secondary Fund II LP	25,000,000	22,848,181	91.4%	26,827,994	1,471,744	1.24	8.6%
Hamilton Lane Secondary Fund III LP	30,000,000	17,762,479	59.2%	17,177,862	12,344,408	1.66	20.5%
Hamilton Lane Secondary Fund IV LP	30,000,000	12,310,713	41.0%	1,065,637	16,321,983	1.41	36.7%
Hamilton Lane Fund VIII LP (Global)	30,000,000	16,412,837	54.7%	3,077,379	22,571,347	1.56	12.1%
GCM Grosvenor - Partnership, L.P.	75,000,000	81,462,229	108.6%	83,447,561	47,508,725	1.61	15.3%
GCM Grosvenor - Partnership II, L.P. (2014)	60,000,000	57,725,012	96.2%	18,421,090	51,082,078	1.20	10.3%
GCM Grosvenor - Partnership II, L.P. (2015)	20,000,000	24,528,093	122.6%	1,428,044	28,687,814	1.23	13.8%
GCM Grosvenor - Partnership II, L.P. (2017)	30,000,000	5,270,169	17.6%	66,378	5,165,438	0.99	-16.5%
Fairview Capital III *	40,000,000	27,349,684	68.4%	1,630,828	30,730,735	1.18	11.2%
Total Private Equity Program	**390,000,000**	**308,662,111**	**79.1%**	**182,761,569**	**245,240,908**	**1.39**	**12.8%**

- Multiple calculation = (market value + distributions) / capital called
- Internal Rate of Return shown here is calculated by Wilshire based on cumulative cash flows and annualized since inception.

MLP Overview



MLP Composite

	Assets (Millions)	Performance QTR	YTD	1-year	3-year	5-year	10-year
Total MLPs (Gross)	**$ 253.1**	**-0.26**	**20.30**	**3.30**	**2.67**	**-3.53**	**-.-**
Total MLPs (Net)		**-0.42**	**19.91**	**2.61**	**2.01**	**-4.15**	**-.-**
Alerian MLP Index		0.12	16.96	3.09	-0.42	-7.20	-.-
Net of Fee Value Added vs Index		*-0.54*	*2.95*	*-0.48*	*2.43*	*3.05*	
Alerian MLP Index		0.12	16.96	3.09	-0.42	-7.20	8.21
S&P MLP Index		-0.59	18.05	3.23	1.54	-6.65	8.87
Bloomberg Commodities Index		-1.19	5.06	-6.75	-2.18	-9.15	-3.74

Managers

	Assets (Millions)	Performance (%) QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
MLPs								
Harvest Fund Advisors (Gross)	**$ 126.5**	**0.28**	**21.72**	**3.54**	**3.02**	**-3.78**	**6.01**	
Harvest Fund Advisors (Net)		**0.10**	**21.27**	**2.76**	**2.26**	**-4.45**	**5.27**	**Dec-11**
Alerian MLP Index + 1.5%		0.49	17.71	4.59	1.08	-5.70	2.41	Dec-11
Net of Fee Value Added vs Objective		*-0.39*	*3.56*	*-1.83*	*1.18*	*1.25*	*2.86*	
Alerian MLP Index		0.12	16.96	3.09	-0.42	-7.20	0.91	Dec-11
Net of Fee Value Added vs Benchmark		*-0.02*	*4.31*	*-0.33*	*2.68*	*2.75*	*4.36*	
Information Ratio				**-0.08**	**0.81**	**0.67**		
Sharpe Ratio				**0.02**	**0.05**	**-0.26**		
Atlantic Trust CIBC (Gross)	**$ 126.6**	**-0.80**	**18.91**	**3.05**	**2.33**	**-3.96**	**6.67**	
Atlantic Trust CIBC (Net)		**-0.93**	**18.58**	**2.47**	**1.76**	**-4.49**	**6.09**	**Dec-11**
Alerian MLP Index + 1.5%		0.49	17.71	4.59	1.08	-5.70	2.41	Dec-11
Net of Fee Value Added vs Objective		*-1.42*	*0.87*	*-2.12*	*0.68*	*1.21*	*3.68*	
Alerian MLP Index		0.12	16.96	3.09	-0.42	-7.20	0.91	Dec-11
Net of Fee Value Added vs Benchmark		*-1.05*	*1.62*	*-0.62*	*2.18*	*2.71*	*5.18*	
Information Ratio				**-0.17**	**0.65**	**0.70**		
Sharpe Ratio				**0.01**	**0.02**	**-0.26**		

MLP Overview (Continued)

- The Fund's Master Limited Partnership (MLP) program is comprised of two individual managers, Harvest Fund Advisors and Atlantic Trust (formerly Invesco), with the mandates essentially split evenly between the two. For the second quarter of 2019, MLPs, as measured by the Alerian MLP Index, were down 1.9% on a price basis and generated a 0.1% total return when including the impact of distributions. This compares to a 3.8% price basis and 4.3% total return for the S&P 500 Index. Crude oil weakness over the period likely weighed on midstream performance relative to the broader markets, but midstream demonstrated resilience relative to other energy subsectors with oil and gas producers and oil field service providers both falling significantly in Q2.

Harvest Fund Advisors (MLPs)

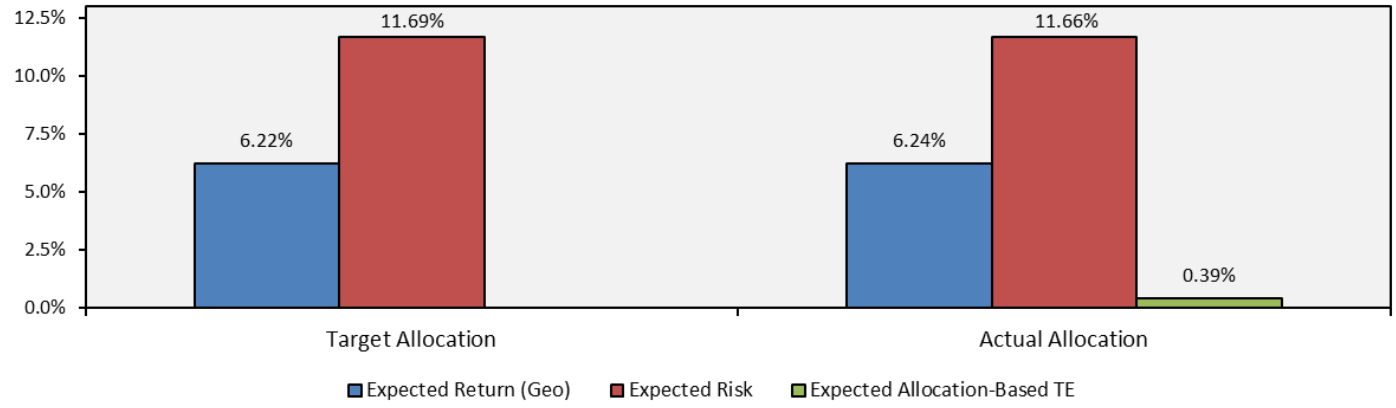
- Harvest Fund Advisors manages one of the Fund's two MLP portfolios. During the second quarter the Harvest portfolio returned 0.10% (net of fees), about in-line with its benchmark (Alerian MLP Index) which returned 0.12%. Since the Harvest portfolio typically has approximately anywhere from 96% to 100% of its value invested in energy sector MLPs, sector weighting has not historically been a meaningful source of added or detracted value. During the period the portfolio's energy holdings delivered performance slightly above that of the benchmark. Individual stock performance was mixed during the quarter with a wide dispersion of returns amongst names. Several stocks surged higher during the quarter, the strongest performer being Buckeye Partners (+22.9%) while several other stocks faltered during the period including the portfolio's second largest holding Energy Transfer Equity, which was down -6.6% for the period. Lack of an allocation to the utilities segment of the market (1% of the index) detracted from results as utilities posted double digit returns during the period. Following this quarter's results the Harvest Fund Advisors MLP portfolio continues to outperform against its benchmark for the three- and five-year periods, as well as since inception (12/11)

Atlantic Trust (MLPs)

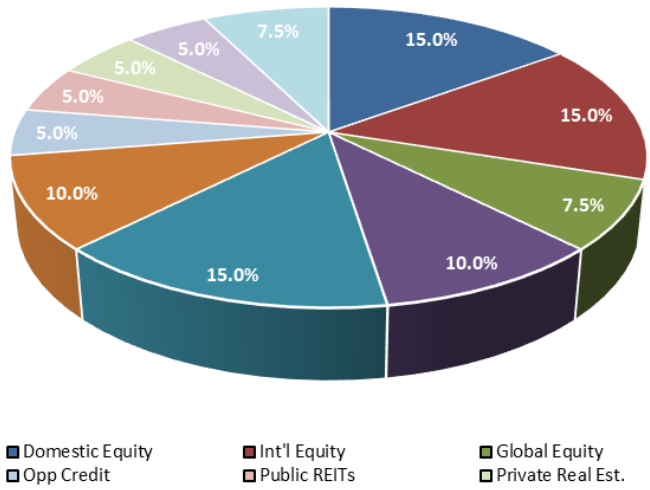
- Atlantic Trust CIBC (formerly Invesco) manages the Fund's other MLP portfolio. During the second quarter, the Atlantic Trust portfolio returned -0.93% (net of fees), trailing its benchmark (Alerian MLP Index) which returned 0.12%. It is important to note that the Atlantic Trust portfolio (containing 24 stocks) is more concentrated than the Harvest portfolio (29 stocks) as well as the benchmark (40 stocks). As a result, many of its position sizes are relatively much larger and have a greater impact on the overall return. The portfolio's performance during the period was primarily as a result of stock selection, which was confined to the energy segment (this is of course the dominant segment in the market space, comprising over 99% of the benchmark's total asset value). The portfolio's energy-focused MLP stocks generated a -0.82% return for the period trailing the respective benchmark holdings which returned -0.03%. This was driven at least in part by the fact that a few of the portfolio's larger holdings were among its weakest performers during the period. Most notably, Energy Transfer Equity (14.2% weight), returned -6.6% in the current period. Despite this period's relative performance, the portfolio continues to succeed in retaining a mix of higher quality names from within this segment, which has allowed it to recoup some of the relative losses it experienced elsewhere in the portfolio. The portfolio has a lower current yield with the expectation of slightly lower dividend growth over the five-year period relative to the benchmark. The Atlantic Trust MLP portfolio is outperforming against its benchmark for the three- and five-year periods as well as since inception (12/11)

Appendix: Risk Analysis

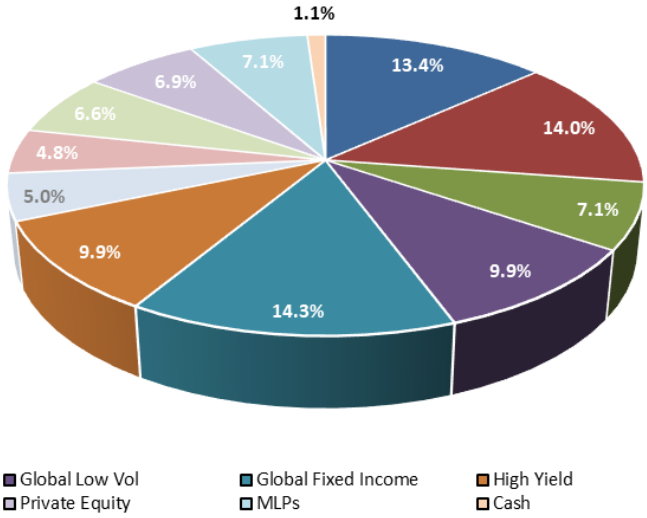
Expected Return and Risk



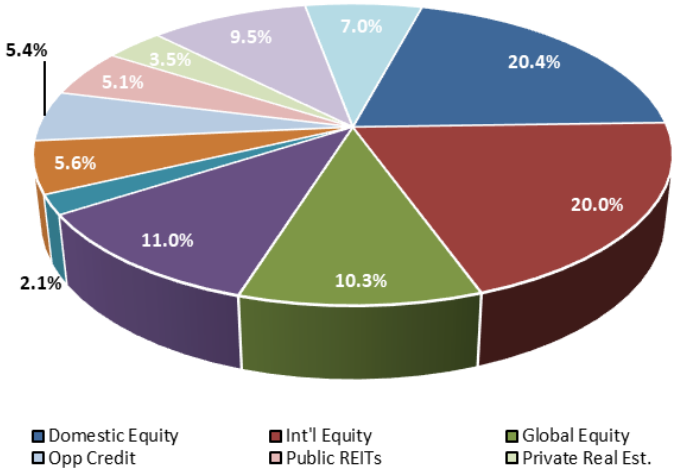
Target Asset Allocation



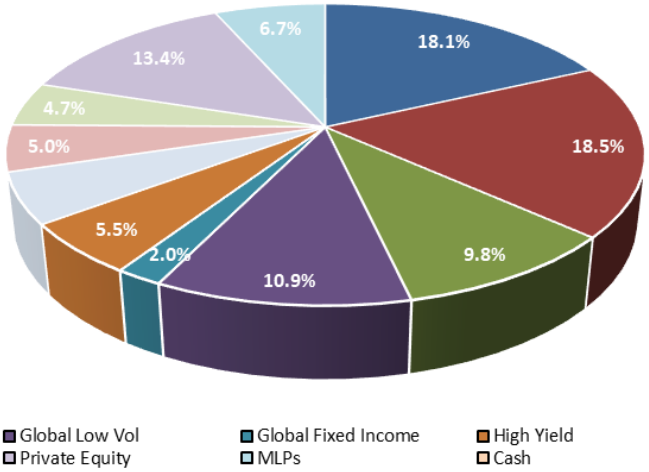
Actual Asset Allocation



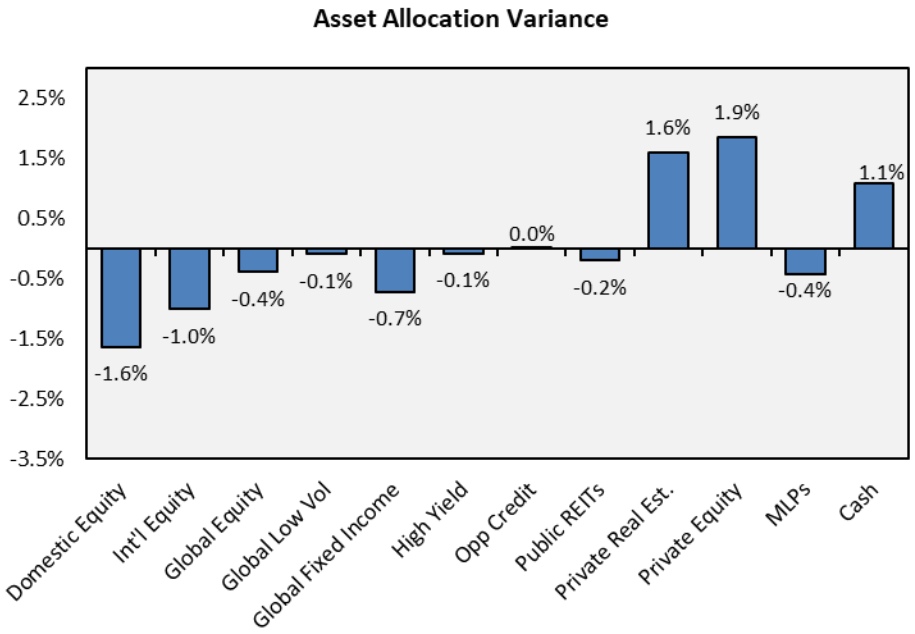
Contribution to Total Risk - Target Allocation

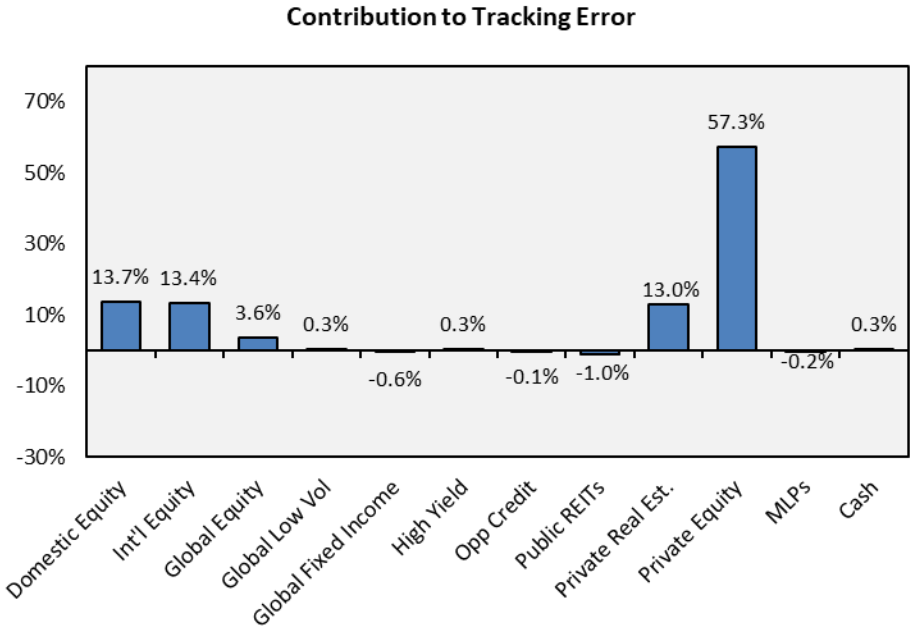


Contribution to Total Risk - Actual Allocation



Expected Return and Tracking Error based on Wilshire's Asset Assumptions





- The variance between the Fund's actual asset allocation and the target allocation is a source of tracking error for the Fund. This "asset allocation tracking error" is currently forecasted to be 0.39% (for the one-year period) at quarter-end. Overweight allocations to private real estate and private equity provided the largest contributions to tracking error at the total fund level.

Manager Risk Statistics

U.S. Equity				
T. Rowe Price (Enhanced Index)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	19.32	12.32	12.25	12.92
Standard Deviation (Index)	18.99	12.19	12.03	12.73
Sharpe Ratio	0.42	1.11	0.85	1.11
Sharpe Ratio (Index)	0.42	1.04	0.81	1.11
Excess Risk	0.90	1.12	1.09	0.99
Information Ratio	0.12	0.80	0.51	0.15

Systematic (Small Core)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	23.54	16.51	15.65	17.67
Standard Deviation (Index)	24.91	17.11	16.63	17.46
Sharpe Ratio	-0.33	0.68	0.52	0.82
Sharpe Ratio (Index)	-0.22	0.63	0.37	0.74
Excess Risk	3.71	3.74	3.79	3.52
Information Ratio	-0.64	0.11	0.51	0.40

Channing Capital (Small Value)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	28.06	18.87	17.96	*n/a*
Standard Deviation (Index)	23.52	17.33	16.41	*n/a*
Sharpe Ratio	-0.26	0.37	0.22	*n/a*
Sharpe Ratio (Index)	-0.36	0.48	0.27	*n/a*
Excess Risk	6.33	4.87	4.53	*n/a*
Information Ratio	0.21	-0.26	-0.13	*n/a*

Redwood (Small Growth)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	25.88	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	26.55	*n/a*	*n/a*	*n/a*
Sharpe Ratio	-0.07	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	-0.10	*n/a*	*n/a*	*n/a*
Excess Risk	4.59	*n/a*	*n/a*	*n/a*
Information Ratio	0.21	*n/a*	*n/a*	*n/a*

Smith Graham (Mid-Cap)	1 Yr	*3 Yr*	*5 Yr*	*10 Yr*
Standard Deviation	26.34	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	21.32	*n/a*	*n/a*	*n/a*
Sharpe Ratio	-0.41	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.25	*n/a*	*n/a*	*n/a*
Excess Risk	7.89	*n/a*	*n/a*	*n/a*
Information Ratio	-1.63	*n/a*	*n/a*	*n/a*

Real Estate Investment Trusts				
Adelante (REIT)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	16.43	12.70	13.92	15.65
Standard Deviation (Index)	16.54	13.04	14.52	16.56
Sharpe Ratio	0.62	0.30	0.51	0.96
Sharpe Ratio (Index)	0.48	0.22	0.50	0.92
Excess Risk	1.35	1.52	1.79	1.93
Information Ratio	1.56	0.62	-0.06	-0.13

Real Estate Investment Trusts				
Centersquare (REIT)	1 Yr	*3 Yr*	*5 Yr*	*10 Yr*
Standard Deviation	16.49	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	16.54	*n/a*	*n/a*	*n/a*
Sharpe Ratio	0.54	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.48	*n/a*	*n/a*	*n/a*
Excess Risk	0.89	*n/a*	*n/a*	*n/a*
Information Ratio	1.00	*n/a*	*n/a*	*n/a*

Non-U.S. Equity				
Acadian (Int'l Small Cap)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	18.02	13.39	13.48	15.91
Standard Deviation (Index)	16.25	11.87	12.50	15.18
Sharpe Ratio	-0.36	0.72	0.25	0.72
Sharpe Ratio (Index)	-0.50	0.53	0.15	0.52
Excess Risk	3.01	3.70	3.46	3.32
Information Ratio	0.56	0.84	0.44	0.99

AQR (Int'l Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	17.90	12.71	12.69	15.65
Standard Deviation (Index)	15.87	11.40	12.55	14.80
Sharpe Ratio	-0.31	0.54	0.10	0.43
Sharpe Ratio (Index)	-0.06	0.69	0.10	0.39
Excess Risk	2.89	2.60	2.46	2.46
Information Ratio	-1.57	-0.39	0.01	0.36

Ativo (Int'l Developed)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	15.40	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	15.26	*n/a*	*n/a*	*n/a*
Sharpe Ratio	-0.04	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	-0.08	*n/a*	*n/a*	*n/a*
Excess Risk	2.95	*n/a*	*n/a*	*n/a*
Information Ratio	0.18	*n/a*	*n/a*	*n/a*

Global Equity				
Wellington (Global Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	20.38	13.08	13.12	*n/a*
Standard Deviation (Index)	17.30	11.32	11.79	*n/a*
Sharpe Ratio	0.05	0.76	0.48	*n/a*
Sharpe Ratio (Index)	0.19	0.89	0.44	*n/a*
Excess Risk	3.84	3.10	3.29	*n/a*
Information Ratio	-0.59	-0.03	0.29	*n/a*

Ariel (Global Equity)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	15.96	*n/a*	*n/a*	*n/a*
Standard Deviation (Index)	17.30	*n/a*	*n/a*	*n/a*
Sharpe Ratio	0.08	*n/a*	*n/a*	*n/a*
Sharpe Ratio (Index)	0.19	*n/a*	*n/a*	*n/a*
Excess Risk	3.49	*n/a*	*n/a*	*n/a*
Information Ratio	-0.57	*n/a*	*n/a*	*n/a*

Global Low Volatility				
Acadian (Global Low Volatility)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	12.71	9.08	*n/a*	*n/a*
Standard Deviation (Index)	11.06	8.20	*n/a*	*n/a*
Sharpe Ratio	0.61	0.80	*n/a*	*n/a*
Sharpe Ratio (Index)	0.94	0.89	*n/a*	*n/a*
Excess Risk	3.59	2.89	*n/a*	*n/a*
Information Ratio	-0.66	0.01	*n/a*	*n/a*

Fixed Income (Core)				
Securian (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.97	2.71	2.70	2.9
Standard Deviation (Index)	3.28	3.03	2.94	2.89
Sharpe Ratio	1.78	0.71	1.04	1.66
Sharpe Ratio (Index)	1.66	0.30	0.70	1.17
Excess Risk	0.80	0.66	0.59	0.77
Information Ratio	-0.18	1.50	1.26	1.78

Manager Risk Statistics

High Yield Fixed Income				
BlackRock (High Yield)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	6.48	4.21	5.05	5.67
Standard Deviation (Index)	6.67	4.45	5.80	6.29
Sharpe Ratio	0.72	1.25	0.64	1.37
Sharpe Ratio (Index)	0.72	1.31	0.59	1.31
Excess Risk	0.46	0.51	1.67	1.38
Information Ratio	-0.21	-1.10	-0.11	-0.34

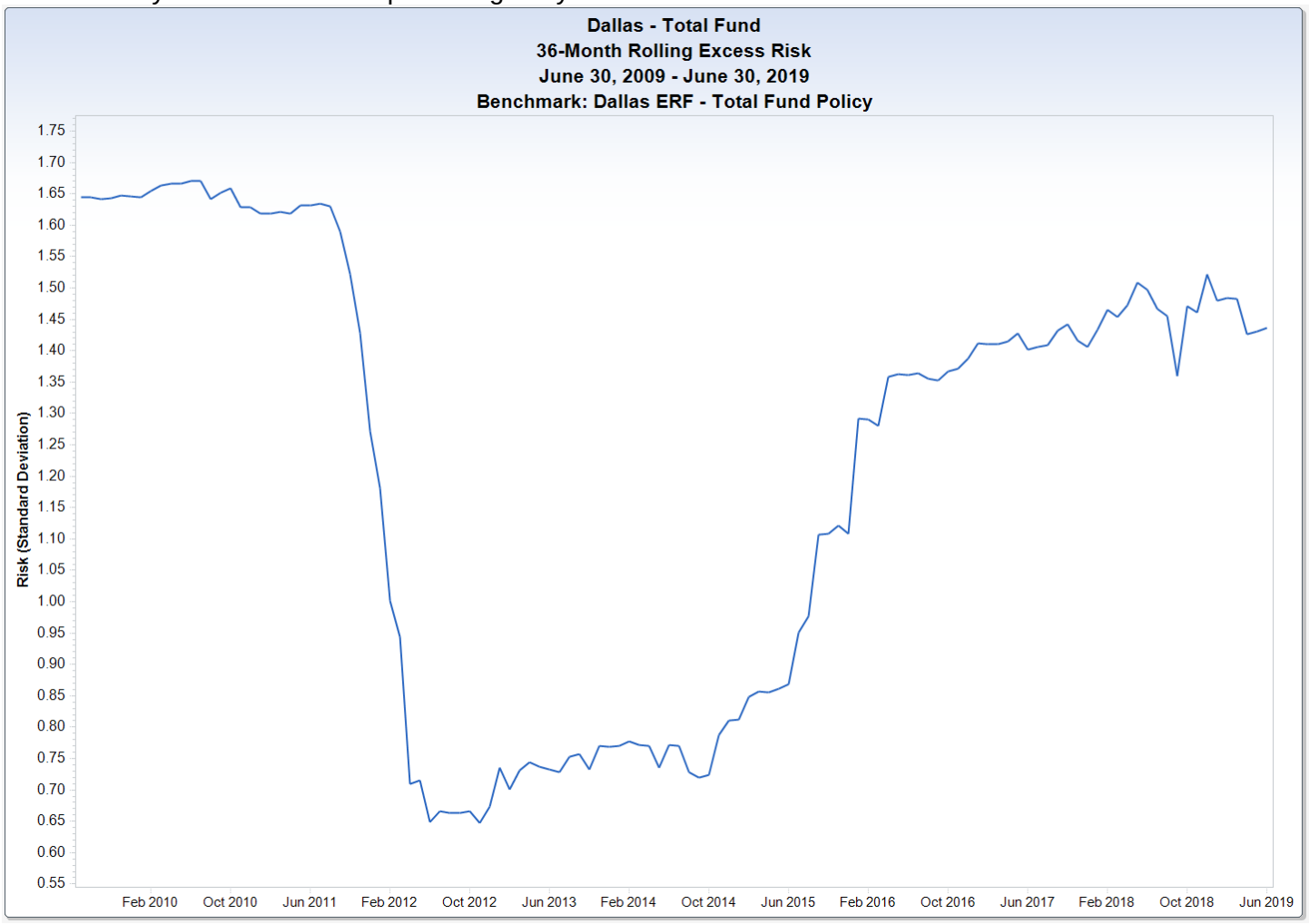
Oaktree (High Yield)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	6.82	4.56	5.58	5.78
Standard Deviation (Index)	6.67	4.45	5.80	6.29
Sharpe Ratio	0.48	0.99	0.46	1.23
Sharpe Ratio (Index)	0.72	1.31	0.59	1.31
Excess Risk	0.36	0.58	0.68	1.26
Information Ratio	-4.02	-2.18	-1.21	-0.84

Neuberger Berman (Credit Opps)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	5.48	4.01	*n/a*	*n/a*
Standard Deviation (Index)	5.13	3.64	*n/a*	*n/a*
Sharpe Ratio	0.91	1.28	*n/a*	*n/a*
Sharpe Ratio (Index)	1.07	1.28	*n/a*	*n/a*
Excess Risk	1.21	1.16	*n/a*	*n/a*
Information Ratio	-0.41	0.40	*n/a*	*n/a*

Fixed Income (Core)				
Aberdeen (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	3.40	3.01	2.93	3.1
Standard Deviation (Index)	3.28	3.03	2.94	2.89
Sharpe Ratio	1.58	0.43	0.71	1.30
Sharpe Ratio (Index)	1.66	0.30	0.70	1.17
Excess Risk	1.34	0.86	0.89	1.20
Information Ratio	-0.04	0.43	0.02	0.51

Garcia Hamilton (Core Fixed Income)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	2.49	2.34	2.84	*n/a*
Standard Deviation (Index)	3.28	3.03	2.94	*n/a*
Sharpe Ratio	1.27	0.32	0.76	*n/a*
Sharpe Ratio (Index)	1.66	0.30	0.70	*n/a*
Excess Risk	1.07	1.02	1.09	*n/a*
Information Ratio	-2.00	-0.16	0.08	*n/a*

Master Limited Partnerships				
Harvest (MLP)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	23.93	18.21	20.39	*n/a*
Standard Deviation (Index)	20.36	16.73	19.58	*n/a*
Sharpe Ratio	0.02	0.05	-0.26	*n/a*
Sharpe Ratio (Index)	0.04	-0.11	-0.41	*n/a*
Excess Risk	3.89	3.3	4.42	*n/a*
Information Ratio	-0.08	0.81	0.67	*n/a*

Atlantic Trust CIBC (MLP)	1 Yr	3 Yr	5 Yr	10 Yr
Standard Deviation	22.34	17.69	20.56	*n/a*
Standard Deviation (Index)	20.36	16.73	19.58	*n/a*
Sharpe Ratio	0.01	0.02	-0.26	*n/a*
Sharpe Ratio (Index)	0.04	-0.11	-0.41	*n/a*
Excess Risk	3.45	3.36	4.20	*n/a*
Information Ratio	-0.17	0.65	0.70	*n/a*

- Below is a historical visualization of realized tracking error ("ex-post") for the Employees' Retirement Fund of the City of Dallas over the preceding ten years: